THE OÖLOGIST,

FOR THE STUDENT OF

BIRDS, THEIR NESTS AND EGGS.

VOLUME XVIII.

ALBION, N. Y.:
FRANK H. LATTIN, M. D., PUBLISHER.
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1901.

INDEX TO VOL. XVIII.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 1. ALBION, N. Y., JAN., 1901. WHOLE NO. 172

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No.172 your subscription expires with this issue
175 " " " " Apr., 1901
180 " " " " Sept., "
184 " " " " Dec., "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

A RARE BARGAIN!—One fine buffalo overcoat, price $100.00. J. W. PRESTON, Baxter, Iowa.

I WILL PAY CASH for heavy marked sets of Red-shouldered and Red-tailed Hawks. If you have such send description and state price wanted. H. C. HIGGINS, Cincinnatus, N. Y.

FOR SALE.—Ginseng Seed, the coming money maker, also for exchange A1 sets 194, 197, 326, 339, 428, 491 and many others. Send for list. J B. HINE, East Onondaga, N. Y.

WANTED.—Fisher's Hawks and Owls of N. A. (illustrated) for cash, also some back Nos. of Osprey and Nidologist. What have you? J. MERTON SWAIN, Waterville, Maine.

FOR EXCHANGE.—Complete file Natural Science News, 66 copies; 2 Columbian half dollars; 12 back Nos. Osprey; Vols. I, II, III, Museum; 1 Bristol Steel Trolling Rod, never used but twice. Wanted birds eggs in sets with complete data. ERNEST L HALEY, Rangeley Maine.

WANTED AT ONCE.—Osprey Vol. I, Nos. 2, 4; Nidologist Vol. I, Nos. 2, 4, 6; Ornithologist Vol. I, No. 6; Oregon Naturalist Vol. I, Nos 2, 3, 4; Museum, all Vol. VI; Iowa Ornithologist, Vol. I, Nos. 1 and 4: Vol. II, No. 1; Vol. IV, Nos. 1, 3 and 4; Popular Science News Vol. 32, Nos. 1, 2 and 11; Midland Monthly, June and August, '97, and many others. Will give cash or good exchange in sets and singles or books such as "Tenney's Zoology," "Dana's Geology," etc. ALBERT F. GANIER, Bowmar Ave., Vicksburg, Miss.

CHOICE SETS of 499, 581c, 591b and 519 to exchange for common Eastern sets. Want five or six sets of each species. Lattin's list used. J. S. APPLETON, Simi, Ventura Co., Cal.

SNAP!—High scoring, pedigreed, Belgian Hare, doe, to exchange for best offer of eggs, skins, mounted birds or curios. South Dakota sets for sets and singles. H. E. Lee, Bryant, S. D.

MANY FINE EGGS of this locality, such as Hawks, Owls, Vireos, Flycatchers, Wrens and others to exchange for eggs not in my collection. I will have on hand a great many eggs, both sets and singles, this coming season. All eggs collected by myself are strictly first class and sets are originals accompanied with full datas. If you wish to make a good exchange here is your chance. Send list and receive mine. Fair dealing. In exchanging I use Taylor's Standard Catalogue as a basis. ADOLF SCHUTZE, 1611 Sabine Street, Austin, Travis Co., Texas.

TO EXCHANGE.—Over 1000 different stamps including complete set of unused Omaha issue, in large album; some copies of Osprey and about 100 arrow points. For southern or eastern land shells, beetles, good mountable bird skins or A1 sets. PAUL B. SMITH, Box 2, E. Cleveland, Ohio.

COLUMBIA, HARTFORD and Wolf-American Bicycles, new and second-hand; fishing rods and tackle. guns, rifles, cameras, most any article for out door sport and nature study. Prices right. I want strictly first class sets of eggs in part or full payment. Write me stating wants and send list of eggs. Will quote low cash prices. Can save you money. BENJAMIN HOAG, Stephentown, N. Y.

TO EXCHANGE.—Sets of 487, 187, 367, 36 for common sets. Have you my last price lists? If not you should drop me a postal at once. I have everything you need. ERNEST H. SHORT, Rochester, N. Y.

EXCHANGE —Field or marine glass, cost $16, extension hoods, shoulder straps, leather case, "Lefils, Paris," for sets, O. & O. books or cash. Sets preferred. E. R. FORREST, Washington, Pa.

"Would say my ad. in OOLOGIST for unmounted sea mosses has brought me specimens enough to cover a surface 12 ft. square. I think the OOLOGIST is the best advertising medium for collectors in America." WM. CUDNEY, Galt, Ont.

BELGIAN HARES.—Employed persons may make money raising them. Pleasant, profitable and requires but little time, money or space. Let me start you. R. A. POWELL, 135 E. 5th St., St. Paul, Minn.

MIDWINTER BARGAINS in sets of first-class eggs:—Holboell's Grebe, 1-3, 15c; St. Domingo Grebe, 1-5, 12c; Pigeon Gullemot. 1-2, 15c; Razor-billed Auk, 1-1. 12c; Ring-billed Gull, 1-2, 8c; Caspian Tern, 1-2, 12c; Black Tern, 1-2, 5-3, 4c; Black Skimmer, 13-2, 6c; Ashy Petrel, 4-1, $1; Booby, 1-2, 40c; Faralone Cormorant, 1-3, 15c: Brandt's Cormorant, 1-2, 8c; Baldpate, 1-9, 25c; Am. Elder, 1-4, 15c; Canada Goose, 1-5, 50c; White-faced Glossy Ibis, 3,4, 12c; American Bittern, 3-5, 20c; Least Bittern, 1-4, 1-5, 5c; Great Blue Heron, 3, 4, 5 10c; Little Blue Heron, 1-4, 4c; Black-crowned Nightheron, 5-3, 1-4, 5c; Limpkin, 1-5, 25c; King Rail, 1-7, 9c; Clapper Rail, 1-8, 4c; Fla. Gallinule, 1-9, 4c; European Coot, 1-7 6c; Am. Coot, 1-6, 3c; Red Phalarope, 1-4, 35c; Northern Phalarope, 1-4, 25c; Am. Avocet, 1-3, 15c; Black-necked Stilt, 3, 4, 12c; Killdeer, 2-3, 2-4, 6c; Belted Piping Plover, 1-3, 1-4; Scaled Quail, 9, 19, 11, 12, 15c; Ring Pheasant, 1-11, 10c; Willow Ptarmigan, 1-7, 25c; Rock Ptarmigan, 1-10, '25c; Prairie Hen, 1-11 6c; Turkey Vulture. 2-2, 25c; Black Vulture, 2-2, 25c; Cooper's Hawk, 1-3, 10c; Harris' Hawk, 2-2, 10c; Swainson's Hawk, 7-2, 12c; Golden Eagle, 1-1, $3.50; Am. Sparrow Hawk, 1-3, 10c: Audubon's Caracara, 2-3 5 2, 30c; Western Horned Owl. 1-2, 35c; Roadrunner, 9-4, 5c; Yellow-bill-d Cuckoo, 1-3, 5c; Belt-d Kingfisher, 1-5, 8c; Chimney Swift, 1-3, 1-5, 5c; Scissor-tail Flycatcher, 3, 4, 5, 4c; Alder Flycatcher, 1-3. 3c; Least Flycatcher, 1-4, 5; White-necked Raven, 3, 4, 5, 6, 12c; Am. Crow, 4-4- 3-5, 2c; Starling, 2-4, 5c; Bobolink, 1-5, 15c; Yellow-headed Blackbird, 1-3. 2c; Bicolored Blackbird, 1-3. 1-4, 3c; Orchard Oriole, 4. 5, 2c; Baltimore Oriole, 1-4, 3c; Bullock's Oriole, 1-4, 3c; Bronzed Grackle, 1-3, 2-5, 1 6, 2c; Purple Grackle, 1-3, 1-4, 3c; Great-tailed Grackle, 3, 4, 5, 3c. Am. Goldfinch, 1-4. 3c; Lark Sparrow. 3, 4, 5. 3c; Black-throated Sparrow, 1-4, 10c; Cassin's Sparrow, 1-3, 30c; Song Sparrow, 2-4, 5-5, 1c; Samuel's Song Sparrow, 1-4, 3c; Abert's Towhee, 2-3, 20c; Lark Bunting, 1-4, 9c; Cliff Swallow, 2-4, 1c; Barn Swallow, 1-4, 2c; White-rumped Shrike, 1-5, 1-6, 4c; White eyed Vireo, 1-3, 4c; Bell's Vireo, 3, 4, 5, 3c; Yellow Warbler, 2-3, 1-4, 1c; Redstart, 1-4, 4c; Meadow Pippit, 1-4, 5c; Catbird. 3, 4, 5, 1c; Rock Wren, 1-4, 35c; Long-billed Marsh Wren, 4, 5, 3c; Chickadee, 1-3, 1-4, 5c; California Bushtit, 1-4, 5; Wood Thrush, 2-3, 3c: Bluebird, 2-5, 3c; Plain Titmouse. 1-6, 10c; Red-shafted Flicker, 2-5, 5c; Black Phoebe, 1-4, 5c; Parkman's Wren, 1-7, 4c; Pileated Woodpecker, 1-2, $1.50; Russet-backed Thrush, 1-4, 5o; Bald Eagle, 1-1, (cracked at blow-hole) 76c; Kidder's Hawk, 1.3, (large holes) 15c; Caracara, 1-3, (large holes) 15c; Black Vulture, 1-2, (large holes) 10c.

The above prices are per egg, *post-paid*, but smaller orders than $2 are not desired.

SPECIAL! A first class set of four eggs each of White-faced Glossy Ibis and Black-necked Stilt will be sent prepaid on receipt of $1. J. M. & JAMES J. CARROLL, Waco, Texas.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

CHOICE southern sets of Royal Tern, Brown Pelican, Willet, Wilson's Plover, Laughing Gull, Clapper Rail, Black Skinner for sale very cheap or exchange sets or singles. DR. M. T. CLECKLEY, 457 Greene St., Augusta, Ga. 3t

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I send you today some ads for your excellent paper. I must say that ads in your paper always pay.—CHRIS P. FORGE, Carman, Manitoba.

HEAR YE! Hear Ye! Hear Ye! This is to certify that my advertisements in the OOLOGIST have paid me better than have the combined ads. in most of the amateur and natural science papers. Ads. in the OOLOGIST always bring returns, and it is safe to say that there is no paper having three times the circulation of this widespread periodical which can give equal satisfaction. MORRIS GIBBS, M. D., Kalamazoo, Mich

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MAKE MONEY.—By securing a county agency for our New Edition of the Reversible U. S. and World Map. This map is 66x46 in. in size, being the largest one-sheet map published; mounted on sticks ready to hang; eleven beautiful colors. One side shows a grand map of our great country and inset maps of its new possessions. The other side shows an equally good map of the world. On receipt of $1.25 we will send a sample copy by prepaid express, and will inform you how to obtain a trial agency. Our men clear from $15.00 to $35.00 weekly after a month's work. Maps can be returned if not satisfactory. Yours truly, RAND, McNALLY & COMPANY, 160-174 Adams St., Chicago, Ills. 172

PLATE HOLDER—Double, 5¼x5½, Blair Camera Co., ($1.00), prepaid 34c. FRANK H. LATTIN, Albion N. Y.

CODDINGTON MAGNIFIER (Miners' glass), diameter ⅝in, cost $1.50, prepaid 95cts. FRANK H. LATTIN, Albion, N. Y.

"SNAPS" for taxidermists. 7in. Stuffers, spring handle (1.25), 80c; Scissor-handle Stuffers, 12in. ($1.75), $1.05; Scissor-handle Stuffer, 15in, ($2.50) $1.60; Bone Cutters, extra fine and heavy, ($2.50) $1.60; Forceps for Insects ($1.25) 78c; Botanical Collecting Can with shoulder strap, size 12x7½ x3½ in. ($1.50) $1.10; Tenaculum or Dissecting Hook, folding in handle ($1) 28c. All *prepaid* at prices quoted, regular prices in ( ). FRANK H. LATTIN, Albion, N. Y.

TAXIDERMIST'S OUTFIT:—Contains one heavy Cartilage Knife; 1 nickeled and engraved Scalpel with tip shaped for detaching skin, muscles, &c; 1 pair Scissors; 1 pair Forceps; 1 Dissecting Hook; 1 Brain Spoon; 1 pocket Wire Cutter. Instruments best, all packed in polished Hard-wood Case. A *better* outfit than the one always sold at $3. I have only two outfits and will close them out at only $2.20 *prepaid*. FRANK H. LATTIN, Albion, N. Y.

"I don't know whether my ad. has reached its time limit yet or not, but stop it any way. My supply of exchange material was exhausted some time ago and replies to the ad. still come in. F. P. DROWNE, 20 Benefit St., Providence, R. I.

WANTED.—Buyer for case stuffed birds. One (each) Hoot Owl, Screech Owl, Barn Owl, Blue Jay, Pheasant and young, Snipe, two Wild Pigeons, three Wild Ducks, Quail, Blue Jay, Redbird, Hummingbird, Mink. Gray Squirrel. Red Squirrel, Alligator and several others, 30 in all; elegantly mounted. Make an offer. F. W. GATES, Chattanooga, Tenn. 172

COLLECTORS will do well to send early lists of fresh taken eggs. Ai in all respects. Will pay cash or give good exchange. Give lowest cash price. I have to exchange: Black-chinned Humm r n-2, Bobwhite 1-11, Clay-colored Sparrow 6-4, Franklin's Gull 1-2, White-neck Raven 1-4 1-5 1-6, Caracara 1-3, Louisiana Heron 1-4, Black-necked Stilt 4-4. Great White Heron 1-4; one good egg with data of the New Zealand Spteryx, very rare, for cash or choice exchange; and Vol. I Auk, best offer. J. W. PRESTON, Baxter, Ia.

WILL EXCHANGE for Mounted Birds or eggs in sets the following Mounted Birds: Evening Grosbeak, Varied Thrush, Curve-billed Thrasher, Am. Three-toed Woodpecker, Young Owl in Down, Louisiana Tanager, Stella's Jay. Eggs: 1-2 Chuck-wills-widow. Skins: Phainopepla; Nashville, Blue-winged, Kentucky, Magnolia, Black-throated, Blue Warblers; Snowflake, Pine Siskin and Am. Crossbill. Send in your lists. Reply to all. GEO. H. SWEZEY, 66-79 Jackson St., Newark, N. J.

RARE WAR RELICS for sale:—Cuban Machete $2, American Machete, bone handle $2.25, Spanish Bayonet 20-inch blade $1.50, Spanish Cartridge Box $2. The following are Civil War Relics: Haversack 50c, Knapsack $1 25, Bridle with Bits complete $2, Canteen $1, Navy Revolver $3, Navy Revolver Holsters 50c, Confederate Powder Bag 75c, Enfield Sword Bayonet (Confederate) $1, Spade Bayonet (1776) $2.50, Musket Flints 10c. Don't delay. Inclose stamp for particulars. TEEL & CO. Williamsport, Pa.

OOLOGISTS WANTED:—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

YOU ARE INTERESTED in Something? Why not get all the best things printed about it? We read and clip thousands of newspapers and magazines every week, therefors we can help you make up a scrap book on your favorite hobby. Will take Natural History Specimens in exchange. Send for our booklet, which explains the scope of the clipping industry. 20TH CENTURY PRESS CLIPPING BUREAU, New York Life Building, Chicago.

WANTED:—Will pay cash or "swap" eggs of American Osprey and Hummingbirds (any species with nest). Two good skins of each the Am. Barn and Long-eared Owls, Rattlesnake Rattles, Eggs of Hammerhead Shark. Write what you have and what you want. FRANK H. LATTIN, Albion, N. Y.

NOTICE:—I have retired from the farm and expect to devote more time to collecting. Hoping to hear from old correspoddents I am yours DELOS HATCH, Oakfield, Wis.

FOR SALE OR EXCHANGE:—First class sets of 1 1-3, 191 1-4 142 1-11, 146 1-16, 228 1-4, 273 1-4, 308 1-11, 388 1-2, 387 1-2, 325 1-2, 501b 1-5, 676 1-5, 735 1-6, 751 n-4., several large Bahama Starfish; large collection of foreign stamps. Write what you can offer. GEORGE J. TILLS, Gaines, N. Y.

EGG EXCHANGE:—I offer nicely prepared. authentic sets of the following in exchange for sets I can use: 79a, 93, 107, 116, 286.1, 288, 408, 449, 450, 498b, 520, 549 550, 611.1, 615, 729, 708. In sending list of duplicates it would be well to mention how many of each species you have to exchange as I can use series of most kinds. JAMES P. BABBITT, Taunton, Mass.

FOR SALE OR EXCHANGE, price per set prepaid: Whimbrel 5-4, 48c: Northern Phalarope 5-4, 60c; Red-throated Loon 5-2, 50c; Rich Ptarmigan 5-1,0 $2.00; Dunlin 5-4, 48c; White-faced Glossy Ibis 5-4, 80c: many others. Send for list. D. WILBY, 27 Front Street West, Toronto, Ont.

FOR SALE:—U. S. large cents, two-cent coppers, different dates, 5 cents each; Indian War Clubs $1.00; Moccasin, 40cts. to $1.50 according to size. JNO. J. PRICE, 1322 7th St., Des Moines, Ia.

EXCHANGE:—I have a mounted Hutchins's Goose taken in Western New York which I will exchange for mounted Snowy Owl or any desirable showy mount. CORNELIUS F. POSSON, Medina, N. Y.

WANTED FOR CASH:—Ridgway's book, "Nomenclature of Colors." State lowest cash price. Perfect your files, I have several copies of Auks, Nids.,O. &. O., OOLOGISTS and Ospreys to exchange. JAMES H. HILL, New London, Conn.

20th Century Bargains.

CURIOS, (LAND).

Aztec Pottery, Patzcuaro, Mex.
Bowl, irridescent ware, slightly cracked $ 25
Imitation Fruits, various forms colored... 20
Mound Builders' Pottery.
Western New York pieces, plain..... 06
" " " " decorated 10
Large piece of bowl, N. H 25
Pueblo Pottery, Arizona.
Fine pieces showing the beautiful decorations in colors, silver and gilt.....05 25
Modern Relics, buckskin.
Awl Sheath beaded all over, Sioux 35
Money-bag; Navajo, bead and colored hair decoration 50
Money-bag: Ute, beaded in mystical design 60
Bucks-beads, talisman, Shoshone, double string, extra fine 75
Sioux Arrow-shafts, picked up by Army Officer on site of Rosebud massacre, S. D., points left in victims..... 17
Gun-flints, French and Indian period, Penn. or Mich 08
Tuscarora Ceremonial Clubs, 15 in., stained in colors 75
Package Blackfoot Tobacco, "Killickinick" 05
Chinese Coin. "Cash" 03
Porcupine Quill, S. Am 08
" " African..... 25
Buffalo Horn, scraped but not polished, a good one 78
"Kriss" Malay Sword, carved ebony hilt, scrolled brass and laquer scabbard, fine condition 2 75
Egg of Alligator, worth 25 18
" " Gopher, worth 50..... 32
" " Red-leg Turtle, worth 10 04
" " Snapping Turtle, worth 15 05
Icoh o lic specimens as curios or for school purposes:
Grape-vine Beetle, (*Pelidnota*)..... 05
" " 50 for..... 1 50
Locust (*Acridium*) 03
" " 50 to 100 at, each 01½
Spiders, Salamanders, Snakes, etc., prices on application.
Mexican Policeman's Whistle..... 10
"Tapa," native cloth worn by Samoan Islanders 07
Pod of Sabre Bean, Cuba, 16 to 18 in 22
Bunch of "Wax-berries," *Sarpindus*..... 05
"Resurrection Plants," Mexico, can be expanded and closed indefinitely 10
Nest of Trap-door Spider 20
Trap-door Spider mounted in box..... 48
"Tarantula" " " " 58
"Scorpion" " " " 25
Chinese "Horn-nut" 05
Confederate States Bills, $1, $5, $10..... 08
Alligator Tooth, worth 10 03
" " " 25..... 07
Betel Nut, chewed by Samoans to stain the teeth 12

CURIOS, (SEA).

Marine Algæ mounted on cards ..... $ 04
" " extra fine 10
" " in neat shell frames..... 38
Acorn Barnacle, worth 15 06
" " worth 25 08
Fiddler Crab, worth 15..... 06
Horse-foot Crab, worth 35 14
Hermit Crab in shell, worth 25..... 11
Sawfish Saw, worth 45 19
Porcupine Fish, worth 25 17
" " " 35..... 26
" " " 45 33
Sea-horse. Atlantic..... 22
" spined 25
" mammoth, Pacific 32
Pipe-fish, fine..... 50
Arm of Giant Serpent Starfish 06
"Aristotle's Lantern," dental apparatus of Sea Urchin 10
Lucky Tooth of Cod..... 02
Egg of Sand Shark..... 02
" " Nurse " 18
" " Hammerhead Shark..... 12
Egg Cases of Perriwinkle, fine long string 12
Shell, whorls broken out by Hermit Crab... 10
Eyestone, Fla 03
Red Sea-bean, 2 for..... 03
Yellow Sea-bean..... 02
Black Sea-bean 02
Brown-banded Sea-bean..... 03
White Sea-bean 05
Smooth Sea-bean..... 05
Striped Sea-bean..... 02
Cassia Bean, 6 for..... 03
Black eyed Susan, 6 for..... 03
Mimosa, 12 for 03
Job's Tears, 3 for 05
Tooth of Sperm Whale..... 53

SPECIAL COLLECTIONS.

POLISHED WOODS; 22 varieties, sections 2¼x2¼; foreign and native, including Camphor, Mahogany, Sandal, Zebra, Ebony, etc.; worth $3.30. The lot for only.$1 80

BIOLOGICAL SPECIMENS 25 varieties representing 7 orders, all neatly put up in vials, preserved in Formalin and neatly and correctly labeled, listing at $6.45. Well worth $5.00 to any Teacher, Class or Student in Zoology. By express at purchaser's expense, carefully packed .. 2 50 SENT PREPAID east of Mississippi River for 50c extra: west of Mississippi River 75c extra.

SUPPLEMENTARY LIST OF BIRDS EGGS.

Specimens received since January list was printed:

SETS.

Am Osprey, 3 ..... $ 90
Am. Osprey, 2..... 60
Cabot's Tern, 2..... 35
Long tailed Jaeger, 1..... 60
Western Gull, 2 28
Rufous Hummer, nest and 2 65
Black-throated Green Warbler 3 60
Puffin, 1 (curious runt)..... 20

SINGLES (rare).

McFarlane's Screech Owl (partial data).....$ 50
Wilson's Snipe, data 40
Gt. White Heron 75
Scaled Partridge 30
Gray Kingbird, data..... 20
Olive-sided Flycatcher, fine..... 60
Am. Raven, Rocky Mts..... 60
Red-eyed Cowbird..... 15
Black-whiskered Vireo 50
Canadian Warbler..... 45
Winter Wren..... 35
Leconte's Thrasher..... 65
Mountain Chickadee 15
Mockingbird, Costa Rica..... 40
Black Rail..... 1 00
Aleutian Leucosticte..... 80
Pacific Loon..... 70
Ring-neck Duck..... 40
White-tailed Hawk..... 35
Am. Goshawk..... 70

Unless you already have it, don't fail to send for the new (Jan. 1901) list of eggs. Always address,

E. H. Short, Rochester, N. Y.

THE OÖLOGIST.

VOL. XVIII. NO. 1. ALBION, N. Y., JAN., 1901. WHOLE NO. 172

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

TERMS OF SUBSCRIPTION:

Single subscription.....50c per annum
Sample copies.....5c each
The above rates include payment of postage.

Each subscriber is given a card good for a Want, Exchange or For Sale Notice. (This card is redeemable at any time within one year from date thereon.)

Subscriptions can begin with any number. Back numbers of the OOLOGIST can be furnished at reasonable rates. Send stamp for descriptions and prices.

☞Remember that the publisher must be notified by letter when a subscriber wishes his paper stopped, and all arrearages must be paid.

ADVERTISING RATES:

5 cents per nonpareil line each insertion.
12 lines in every inch. Seven inches in a column, and two columns to the page.
Nothing inserted for less than 25 cents. No "special rates," 5 cents per line is "net," "rock bottom," "inside," "spot cash" rate from which there is no deviation and no commission to agents. If you wish to use 5 lines or less space it will cost you 25 cents; 100 lines, $5.00; 1000 lines, $50.00. "Trade" (other than cash) advertisements will be accepted by special arrangement only and at rates from double to five times cash rates. Due Bills and Cards payable in advertising will be honored only at regular rates in force at the date of issuance of said bill or card.

Remittances should be made by Draft, Express or Postoffice Money Order, Registered Letter or Postal Note. Unused U. S. Postage Stamps of any denomination will be accepted for sums under one dollar. Make Money Orders and Drafts payable and address all subscriptions and communications to FRANK H. LATTIN,
Albion, Orleans Co., N. Y.

ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

Nesting of the Broad-winged Hawk.

On the 16th of May, 1895, while walking through a grove of oaks on the edge of a marsh and within fifty yards of a small stream, I frightened a hawk from a nest twenty feet up in the crotch of an oak tree.

I thought it was a Cooper's Hawk, although the plaintive cry it made as it perched among the branches of a tree, one hundred feet away, was new to me. It sounded like "*siggee*," "*siggee*," something like a Kilideer, a Rose-breasted Grosbeak or the alarm cry of a Red-wing Blackbird.

The cry was repeated constantly and had a somewhat ventriloquial effect, so that it was hard to tell just where the birds were, especially as they kept pretty well out of sight and did not fly around much.

When I reached the nest I found it to be about the size of a crow's, and built of sticks and twigs, rather clumsily put together, and lined with a few pieces of bark and eight green oak leaves. It only contained two eggs and still thinking the bird to be a Cooper's Hawk, I left it and did not go back until the 20th, when the hawk was again on the nest. As no more eggs had been laid, I took the two, and on blowing found that incubation was about one-third advanced. The eggs are of a uniform dull white, one blotched and spotted at the larger end, and the other at the smaller end, with faint lilac, which has a clouded effect as if it was under the shell. They are rather small, measuring 1.87 x 1 47 and 1 93 x 1.52. After looking up the subject and getting the opinions of other oölogists, I came to the conclusion that they were the eggs of *Buteo latissimus*.

The following year, on May 26th, as I was passing through the same piece of woods, I thought I would take a look at the old nest, and as I drew near a hawk flew from a new one in another tree not

more than 30 feet from the one of the year before. This time I observed the bird closely and saw that it appeared a little smaller than a Cooper's Hawk and had a shorter tail, and was not so noisy and aggressive. It flew into a poplar tree near by, where it was joined by its mate, and all the time I was near the nest they kept up the cry which is distinctive of the species. The nest was about 30 feet up, composed of sticks and twigs, and lined with bark, green leaves and the down of poplar buds. It contained a very handsome set of three eggs, incubation about half done, and measuring 2.01 x 1.63, 2.01 x 1.63 and 1.99 x 1.60. They are spotted all over with brick-red spots and dots so thickly that the ground color can not be seen, but the coloring is heaviest at the larger end on one egg, and at the smaller on the others.

I was away during the next three years, but on May 10th of last year, while after a set of Long-eared Owls, within about one-half mile from where I found the nests in '95 and '96, I heard the now familiar cry again. The bird seemed to follow me wherever I went, although I only saw it once, and I could hear its cry for a long time. Taking the hint from the bird's actions, I went to the place where I had been successful before, but though there were several old nests in the vicinity, I saw nothing of the hawk until I had reached the far side of the wood about 300 yards away, when I heard it again close at hand. I looked around for a nest, and at first saw none, but finally discovered what appeared to be an old squirrel's habitation about 15 feet up in the crotch of a large black oak, growing on a narrow neck between two sloughs and with only a few other trees around. As the birds were both on hand sitting among the branches of trees near by, though out of sight, I thought it best to investigate, and with some difficulty on account of the size of the tree, I got up to the nest. The crotch in which it was placed was formed by the junction of five branches with the main body of the tree and formed a very secure position. It was built on the remains of an old squirrel's nest and was composed of sticks and twigs, lined with pieces of bark, a few feathers, and some green twigs with the leaves on. It measured 14 x 18 inches in diameter on the outside, was 14 inches deep outside, 7 inches in diameter inside and the hollow was 4 inches deep. It contained no eggs so I left it for a future visit. On the same day as I was pushing my way through an extensive wood of young oak and poplar, which covered the sides of a high hill and was so grown up with underbrush as to be almost impenetrable, I heard "*siggee*," "*siggee*" near by, but could see no bird. I soon found a nest in a small red oak, and then another and another, until I found five, all within fifty yards of the first one, none of them more than twenty feet up, but they all proved on examination to be old ones, so I gave it up for the time being.

On the evening of the 17th, while out for a ride back of Lake Harriet and within the city limits of Minneapolis, and on high ground, mostly under cultivation, I saw a hawk fly from a small grove of oaks, which is about an acre in size and is within 500 yards of Minnehaha Creek.

When returning about dusk, I stopped at the grove and pushed my way through the underbrush to the center of the grove, where I soon found a nest placed about 18 feet up in the forks of a small oak. The outside of the nest was rather loose and scraggy, and spread out so that I could not see whether there was a bird on or not, but a small stick tossed up brought Mrs. Broad-wing off the nest to alight on a tree near by and scold as long as I was near.

The nest was rather wide and the depression very shallow and was lined

with pieces of bark and a few green poplar twigs. The eggs, three in number, are perfect "Red tails" in miniature, one being heavily marked with blotches of red, brown and lilac, one dotted closely all over wtth minute red dots and the larger end solidly covered with heavy reddish blotches; and the other is encircled with a wreath of light red and lilac around the middle, though slightly nearer the small end. Incubation had just started. Measurements 1.88 x 1.49, 1.95 x 1.48, 1.90 x 1.48.

On the 20th I went to visit the nest found on the 10th, and as I drew near the bird left the nest and being joined by its mate, they flew about making more fuss than any of the other pairs had done.

This time the nest contained three handsome eggs, one of them is speckled with red all over and looks like a Turkey's egg, one is marked with large heavy blotches of red, principally at the smaller end, and the other is marked all over with smaller marks, which are thicker at the small end; measurements 2.05 x 1.59, 2.10 x 1.59, 2 04 x 1 60; incubation very slight. This is a very large set.

I next went to visit the locality where I had found the five old nests on the hill, and as I was approaching the spot I came across another nest which looked older and more dilapidated than any of the others, and was mostly composed of dead leaves, being evidently an old squirrel's nest, but over the top of it projected the tail of Mr. (or Mrs) "Buteo." The hawk flew off as I started to ascend and lighting on a tree 30 yards away, commenced the usual serenade. The nest was not more than 14 feet up in the forks of a very small oak and was composed of a few sticks placed on the foundation of dead leaves, lined with a few pieces of bark, a few feathers and some poplar twigs with the green leaves and the fuzz from the buds still on them, and measured 18 x 16 inches in diameter outside, 8 x 7 inches in diameter inside, 8 inches deep outside and 4 inches deep inside. It contained three eggs, incubation begun, one covered all over with brick-red dots so that the ground color can not be seen, and with an almost solid mass of red all over the small end; one marked heavily with brick-red blotches forming a wreath around the small end, and the other clouded and marbled all over with submerged pale lilac; size, 1.84 x 1.47, 1.89 x 1.54, 1.80 x 1.50.

On May 28th while looking for a Marsh Hawk's nest in a large marsh about three miles from Minneapolis, I was surprised to hear the cry of a Broadwing. There was only one tree near and that was a small poplar that grew on a dry piece of ground 35 yards away, and I finally located Mr. Hawk in the lower branches of this tree and on the opposite side He seemed to be carrying on an animated conversation with a Red-winged Blackbird, which, alarmed by my proximity to its nest, was uttering cries of distress, which were quite similar to the Broad wing's. Every time the Blackbird would cry the hawk would answer it, and I presume the latter thought he was making quite an impression. When I tried to get near he flew straight away to a large wood half a mile distant, and I made up my mind that there was a set of eggs in that wood, but as it was getting dark I had to put off searching for them till a later date.

On the 30th having a few hours spare time, I went out to the wood, and after a somewhat prolonged search, as the wood was a large one and the trees small and close together, I found the nest and the hawk flew off. The nest was about 25 feet up in the forks of an oak tree, and was built on top of the dead leaves of an old squirrel's nest and composed of sticks, and thickly lined with green oak leaves; it measured 14 inches in diameter outside, 6 inside, and

12 inches deep outside and 4 inside. It contained two eggs, incubation about one-half done, and measuring 1.88 x 1.57, 1.87 x 1.58. One marked with a wreath of red around the smaller end, and the other with a mass of smaller red spots covering the larger end, and a scattering of dots over the rest of its surface.

On the 4th of June I had occasion to be in one of the railroad yards in the suburbs, when I heard a Broad-wing in a small grove along side of the track. The grove is not above an acre and a half in extent, and on one side is a busy railroad yard and large grain elevator, and on the other a well used street leading to the suburbs and Lake Minnetonka, while the street cars go by right on the edge of the wood. The grove is also a famous hunting ground for the small boy with the air-gun and "Flobert" rifle.

I thought the hawk must be on a hunting trip, for it did not seem like a place in which they would build, but fifteen minutes' search was rewarded by seeing the hawk fly from what seemed to be an old squirrel's nest of dead leaves placed against the trunk of a small oak tree and about 25 feet up. The nest was a flimsy affair of a few sticks placed on a foundation of dead leaves and was lined with a few pieces of bark, a few feathers, (from the bird's tail evidently) some green leaves and fuzz of poplars and a long green weed of some kind (I think it was a "Solomon's Seal") covered with leaves.

The eggs were two in number and incubation was begun. One was marked all over with pale lilac, with a few distinct angular spots of light red, and the other with a few large blotches of red at the smaller end; this egg is irregular in shape and has a distinct crack running clear around it, and a spot where it has been shattered and bulged out, but it has all been healed up again and is as strong as ever. I suppose it must have been broken inside of the bird and before the shell was entirely formed. Size of eggs, 1.92 x 1 50, 1 90 x 1.48.

This completes my series, altogether, 7 sets of 18 eggs, 4 sets of 3, and 3 sets of 2.

I think I could have collected a good many more this year if I had had time, as I found them in every suitable wood in which I searched, and every time I heard their call I found their nest without difficulty. I shall not disturb them any more this season, but next year I expect to take a set from each nest visited as here described.

These sets were all collected within a radius of five miles from the center of the city of Minneapolis and two were within the city limits.

JOHN D. CURRIE,
Minneapolis, Minn.

Bird Music.

[Continued from last issue.]

Another bird that sometimes sings on the wing, is the White-rumped Shrike. It is not generally known that this Shrike, or for that matter any other, has a song. I have heard the song several times and can testify to a series of very agreeable notes nicely modulated. We cannot call the song really melodious, but it is still possessed of uniqueness, as it is essentially unlike the notes of any other bird of my acquaintance. I once heard this Shrike sing as it flew in the characteristic manner of flight-singers, on fluttering wings.

The true love-song of the Golden-crowned Thrush or Oven-bird has been but rarely referred to by writers, in fact, the best musical efforts of this species have only been described in comparatively recent times. The common loud clanking chirpings, so often heard, have been listened to by all observers, but a superior strain, only occasionly uttered, has been listened to by but few intelligently. I feel safe in

saying that no bird among us which is so well known, has eluded the observers of bird songs as this one has done.

I listened to the love song of the Oven-bird for the first time in 1880. A burst of melody reached me in a dense piece of low woods, well filled with underbrush, and the delightful notes were surprising and doubly pleasing to me in this location. At first on hearing the song the idea presented itself that a species new to me was singing, and my extreme care in reaching the glade in hopes of secnring a note, procured me a chance of witnessing a most singular performance. Crawling through the brush I came to a partial clearing, over which a bird, evidently in the highest transports of joy, was fluttering in irregular flight. It is not surprising that I failed to recognize the performer in this, to me, unusual aspect, for there was not a feature in its notes or movements in which it resembled its ordinary and understood habits.

Observing another bird, evidently a Golden-crowned Thrush, and its mate, perched on the ground near, and which appeared to be the center of attraction to the delighted warbler overhead. I quietly awaited the movements of the pair. Never had I heard this song before and never had I witnessed such a scene. This was indeed, making love with a spirit not often witnessed among our warblers.

This song was almost continuous, that is, together with the interruptions of the more subdued call or conversation notes, and the common chattering notes, so well known and described by Coues as a harsh crescendo, and was largely of the most melodious strains.

The energetic, unconscious fellow was in the meantime consistently flying above his inamorata, describing nearly every form of flight except sailing. First dashing to the edge of the glade, then rising to the tops of the bushes he would flutter almost directly upward as we have often seen the European Sparrow or House Wren do, and reaching a height of twenty feet or more, would flutter toward his mate, or dash about the clearing in varying evolutions almost constantly singing. She, in the meantime sat silent, and probably interested in the performance. The appearance of a third party on the scene, undoubtedly also a lover, caused the ecstatic singer to dash into a bush.

This song ecstacy is rare, as it is also the much simpler one of the Grass Finch or Vesper Sparrow as it is called, which also goes into a rapturous song-flight occasionly. The Finch rises into the air fifty feet or more but not as rapidly as the Bobolink, and generally settles back near to the point from which it took its flight. The Bobolink sings as well when perched as in its flight, though not so continued, but the Grass Finch's song when on the surface is very commonplace, while its flight-song like that of the Oven-bird, is superior.

A number of species of birds embraced in the systematic division of, are known to utter their notes on the wing, and from the Crow to the Martin, which is the nearest to a musician among the Swallows, there are many which give their best efforts while flying. Among these is the Prairie Horned Lark, which comes very near to being a singer, and which has a flight of special interest; still these efforts are not sufficiently musicial to entitle the birds to rank in this list of musicians as accepted by critics.

It will be observed that a tremulous motion of the wings almost invariably accompanies song flight. We may maintain, then, that the quiverings of the wings is an accompaniment to the song is a strictly seasonal feature. All have noticed the loss of the song synchronously with the skyward flutter in the case of the Bobolink, when he assumes his summer dress and leaves for

the South to become the plebian rice-bird. I have yet to hear a bird sing on the wing in autumn.

MORRIS GIBBS, M. D.,
Kalamazoo, Mich.

(*To Be Continued.*)

Winter Bird Notes From California.

One of the most abundant winter residents of Santa Clara Co., Cal., is the Western Robin (*Merula migratoria propingua*). He is regarded by the ranchers of Santa Clara Co. as a good weather prophet, although I could never confirm their belief. When the Robins arrive in force in the fall, the farmers prepare for heavy winter rains, and when they are scarce it is said to indicate a dry season.

Although we have a county game law protecting this bird, they are nevertheless killed in considerable numbers by the small boy, Italians and other foreigners, but I think that in the last few years the farmers are more and more coming to realize the need of protecting this and other beneficial birds. Just recently I have heard of several parties who intend to make an example of any one they can find shooting Robins, and I hope that before long something will be done to enforce the law. At any rate, the Cooper Ornithological Club will soon have a law pass, in the state legislature, unless something unexpected happens, which will protect all the song and other birds at all seasons of the year, and which, if passed, we members intend to see enforced.

The Robin arrives with us about the first of October and remains until March. They are more or less gregarious, a flock usually containing about fifty birds, although I have seen flocks which, no doubt, held several hundred.

The Varied Thrush (*Hesperocichla naevia*) arrives about the same time that the Robin does, but is not nearly so common. They are of a retiring disposition and favor a location for their winter home, which contains a number of thick cypress, pine or other thick trees or shrubs, usually near some house, where they are quite content to remain in the seclusion thus afforded until it is time for them to again journey to the thick spruce woods of British America or Alaska, to their summer home.

Another common winter resident is Audubon's Warbler (*Dendroica auduboni*). Most of their time is spent in the orchards vigorously searching, with many a sharp "*chit*," for insects and other food. They arrive about the first of October, and are abundant from this time till the last of February. When they first arrive they are changing from the summer to winter plumage, and some of the specimens taken at this time are very interesting.

In this locality I have made an observation which may, perhaps, help to prove that the sub-species of Audubon's Warbler, described by Mr. Robert McGregor, of Palo Alto, and named Hoover's Warbler, (*Dendroica coronata hooveri*) shows a constant variation. Mr. Grinnell found Hoover's Warbler abundant and nesting in the Kotzebue Sound Region of Alaska, (see Pacific Coast Avifauna No. 1, p. 55) but found no Audubon's Warblers. Now, our Audubon's Warbler, which nests in California, arrives here in the fall about the middle of October, but I have never noted Hoover's Warbler before late in December. This would help to prove that they are a distinct sub-species, whose summer home is Alaska, and the long distance they have to travel will account for their delay in arriving in the winter.

A very modest, though interesting bird is the Dwarf Hermit Thrush, (*Turdus aonalaschkæ*) which is fairly common in our locality in the winter time. He is generally not a very sociable fellow, always traveling by himself through our gardens and feeding upon worms

and other insects. I have often felt sorry for him, he seems so lonely, but I presume he does not mind it.

The Cedar Waxwing (*Ampelis cedrorum*) is an irregular winter visitor with us, coming in flocks of from about twenty to perhaps one hundred. They feed on the seeds of the locust and pepper trees, which are quite extensively grown for shade trees in Santa Clara.

Has the Mockingbird (*Mimus polyglottus*) ever been recorded in Santa Clara Co.? I have never seen a record of it, although I know they occur in winter in Alameda Co., which is next to us on the north. My first record was on the 23d of Jan. 1899, when I saw a male Mockingbird near a residence in a large garden near Santa Clara. I was told he had been around the place for several weeks. Since then I have recorded them as follows: Feb. 9, 1900, female, seen in a garden in Santa Clara; Feb. 13, 1900, male, bird noted in a garden near a house two miles west of Santa Clara; Oct. 12, a pair, male and female, seen near the place I saw a bird Feb. 9, 1900, male singing. From these records I conclude that the Mockingbird is rather a common straggler to our county in the winter time.

Our winter Sparrows, Gambel's (*Zonotrichia leucophrys gambeli*) Intermediate, (*Zonotrichia l. intermedia*) and Golden Crowned (*Zonotrichia coronata*) all arrive about the first of October. The Whited-crowned Sparrow (*Zonotrichia leucophrys*) arrives several weeks later. They all congregate in large flocks in the hedge rows and brush piles where they spend a very merry and sociable winter. These birds are all very much despised by the orchardists, for in February and March when the fruit blossoms are beginning to come out, they form the chief article of diet for these Sparrows. The destruction that a flock of these birds can do in one day is something enormous.

In the winter time our Finches all congregate in flocks, it being no uncommon sight to see a flock of House Finches (*Carpodacus mexicanus frontalis*), Lawrence's and Arkansas Goldfinches (*Astragalinus lawrencei* and *psaltria*), which will contain several hundred birds.

After the first of October we always have with us the American Pipit (*Anthus pensilvanicus*) in abundance. They feed in large flocks in the grain fields and orchards, delighting particularly to run after a plow and pick up the worms as fast as they are turned up. The majority of them leave about the first of April, although I have one record for four birds noted on the 24th of April, which I consider a very late date for them.

I think of all our resident birds in winter the California Bush-tit (*Psaltriparus minimus californicus*) is, perhaps, the most interesting. They congregate in small flocks and will search a garden so thoroughly, investigating all the trees and shrubs, that it has to be a very smart spider who can escape with his life. They are such dainty little birds and are so fearless that they always draw my attention, and I consider it a great privilege to watch a flock of them "do" a peach tree in our back yard.

This is a very incomplete account of some of our winter birds in their chosen homes, but as time is pressing I must desist. Would time permit, I might enumerate the Chickadees, the dainty Kinglet, both species of which are common winter residents, the Woodpeckers, Jays and many others, not omitting the infernal, and ever obnoxious English Sparrow.

This paper is merely intended to show our eastern brethren something of our abundant bird life in winter, as well as in summer, for we can study birds almost as diligently in winter as in nesting season, and it is but a poor ornithologist who cannot enjoy the birds unless he is despoiling them of their most precious treasure—their eggs.

WILLIAM N. ATKINSON,
Santa Clara, Cal.

The Use of Old Nests.

It is a strange economy of Nature, which impels Hawks and Owls, to use old and unattractive nests, when but little energy need be expended, in the construction of new abodes, when each would then build, and differentiate, according to his specific instinct.

April 18th 1895, we saw an *Accipiter cooperi* nearby a nest which was just begun, and concluded that she was constructing same. May 5th, the nest was completed, and on May 19th, we took therefrom a set of five slightly incubated eggs. The nest was typical of the species, very bulky, composed of small sticks and lined with the outer bark of chestnut in chunks from two to five inches long, and from one-half to one and one-half inches wide. It was placed in the crotch of a tall, slender chestnut tree, fifty-five feet from the ground. In 1896 this nest was occupied by a Barred Owl, which hatched its clutch there. When we visited the site April 12th, the shells, strewn about the base of the tree, appeared as if the young had been hatched a day or two previously. The nest appeared, from the ground, as if some inner bark and leaves had been added since it was occupied by the Cooper's, but I think this was probably done by squirrels, during the preceding Fall, as I have never known the Barred Owl to do anything toward building a nest, or fixing over an old one. They appear to be satisfied with what they can find. We again visited this site, in the Fall of '96 and saw by the numerous tracks about the tree, that the nest was occupied, but, by what we could not make out, as the tracks were strange to us. A charge of shot into the nest brought down a pair of old, and four young, white-footed mice. This ended the history of that nest, as it was blown down the following winter.

April 21, 1896, and April 11th, 1897, we collected sets of four Red-shouldered Hawk's eggs from a nest in the crotch of an oak tree, forty-one feet nine inches from the ground. The nest was a typical Buteo's, made of large sticks and containing much inner bark. In '98 the Red shouldered Hawk did not appear but a pair of Cooper's added to the top a few small branches, and reared their young there. During the winter of 1898-1899 this nest was blown down Last spring the Cooper's Hawks built a new nest, whose history we spoiled by removing it entire, together with its complement of three incubated eggs, to our den.

In 1897, on April 20th, we located nests of the Red-shouldered and Cooper's Hawks, which were not more than two hundred feet distant from each other. These were both of the build of '97 and were typical, each, of its species. The Red-shouldered's nest contained two slightly incubated eggs, which we took. The nest of the Cooper's was just completed. On April 30th, we took a set of four fresh eggs from it. Visiting the locality after Chickadee's eggs on May 12th, the same year, we were surprised to start a Cooper's Hawk from the Buteo's nest. A climb to the nest showed that every vestige of the inner bark had been removed. A few small sticks had been added, and the nest relined with outer bark. The nest contained three eggs of the Cooper's. One of the eggs looked as if it might have been deposited many days before the other two, as it had lost all its bluish tint, and otherwise appeared to be highly incubated, while the remaining two had the appearance of being perfectly fresh. We believed, and still do, that this faded egg was part of the first set, which had been taken before it was completed, so we decided to take the set to see if this would not be evidenced by the different stages of incubation. But, on blowing, it proved no different from

the others, all showing incubation had just commenced. Neither of these nests have since been occupied.

April 25th, 1897, we found a nest which had every appearance of being occupied by a Red-shouldered Hawk, very large sticks, inner bark showing prominently, and a pine branch here and there, about the top sides. It was situated in the fork of a large branch, which sloped away from the trunk of the tree, and was forty-two feet from the ground. The bird left the nest when we were about fifty feet from the tree, and almost the same instant, a full grown gray squirrel sprang from the under part of the nest, ran over it, and flattened itself against the tree, a few inches above the nest, and there remained until we began the climb. So astonished were we at seeing a squirrel jump from the very nest of a Hawk, that we paid little attention to the bird, and were very much surprised upon reaching the nest, to find that it's occupant was an *Acciperal cooperi*, instead of a *Buteo lineatus*. This nest contained both the inner and outer bark of the chestnut. It was placed in such an unfortunate position, that it was with great difficulty we succeeded in collecting the three fresh eggs which it contained. The position of the nest was so trying, that when the eggs were taken, we could not wait to examine the nest sufficiently to assert positively that it was a combined nest of the squirrel and the Cooper's. I do not dare to state the manner in which we got the eggs down from this nest, for when we told the story at home that evening, we were immediately branded as worthy disciples of Ananias, and since then, whenever an impropable story is heard, some one is sure to suggest that we can tell a pretty good yarn about how we procured a certain set of Cooper's Hawk. But though the set is, we fear, incomplete it is on account of it's association, prized most highly. It was not occupied in the spring of '99, but last fall my brother shot a gray squirrel from the tree which evidently made the nest his home. We have no doubt but that this nest was built and first occupied by a Red-shouldered Hawk, then occupied by a Cooper's Hawk, and during the winter and perhaps a part of the spring, was occupied by squirrels. The fact that it contained much inner bark when it was occupied by the Cooper's suggests the idea that the Cooper's Hawks may have driven the Buteo away from the nest, after she had prepared it for occupancy in the spring of '97, for during the whole of that spring the Buteos were in the grove, but did not nest there. We have no knowledge as to which of these species is considered the stronger.

In 1898 we took a set of Red-shouldered Hawk's from a pine tree. Typical nest, forty-six feet, six inches from the ground. In April, 1899, we took from this nest a set of three eggs of the Barred Owl. The Owls used the nest just as they found it, without the addition of a stick or a bit of bark.

The last nest which my note books show was used by different species, was a nest built and occupied by a Cooper's in '98. This nest was fifty feet from the ground, in the crotch of a chestnut tree. A pair of Red-shouldered Hawks appropriated this nest in 1899.

JOHN H. FLANIGAN,
Providence, R. I.

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Willet 2-4	55
White-winged Dove 1-2	22
Inca Dove 1-2	60
Marsh Hawk 1-1 10c; 1-3	30
Cooper's Hawk 1-2	15
Harris's Hawk 1-3	45
European Buzzard 1-2	40
Kestrel	50
American Rough-legged Hawk 1-2	1 60
Duck Hawk 1-1	1 50
Florida Red-shouldered Hawk 2-2	60
American Barn Owl 1-2, 30; 1-5	60
Aiken's Screech Owl 1 2	2 50
California Screech Owl 1-5	65
Florida Burrowing Owl 1-6	2 00
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Dusky Grouse 1-4	2 25
Mangrove Cuckoo 1-4	2 60
California Cuckoo 1-3	1 50
Red-shafted Flicker 1-6	30
Northwestern Flicker 1-6	60
Gilded Flicker 1-5	1 00
Poor-will 1-2	2 75
California Woodpecker 1-3	50
Florida Nighthawk 1-2	70
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American Goldfinch n-3	20
Texan Cardinal 1-2	20
Boat-tailed Grackle 3-3	10
Brewer's Sparrow n-4	50
Cassin's Purple Finch 1-4	1 00
Louisiana Tanager 1-3	1 00
Pileated Warbler 1-3	75
Audubon's Warbler 1-2	1 50
Chestnut-sided Warbler n-2 n-3, 35c; n-4	50
Western Robin 2-3, 12c; 2-4	18
Cassin's Sparrow 1-3	1 00
American Dipper 1-4	1 50
White-breasted Nuthatch 1-6	75
Lead-colored Bush Tit 1-7	3 75
Mountain Bluebird 1-4	30
Chestnut-backed Bluebird 1-2	35
Verdin 1-4	1 20
Brown-headed Nuthatch 1-6	50
Curve-billed Thrasher 1-4	30
Bendire's Thrasher 1-3, 75c; 1-4	1 00
Palmer's Thrasher 1-3	75
Thurber's Junco 1-3	75
Blue-fronted Jay 2-1	35
Woodhouse's Jay 1-1	30
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Baird's Wren 1-6	1 30
Lomita Wren 1-5	1 50
Parkman's Wren 1-6	25
California Bush Tit 1-7	35
Prothonotary Warbler 1-6	50
Yellow Warbler n-4	25
Arizona Goldfinch 1-4	38
Mexican Goldfinch 1-5	75
Lawrence's Goldfinch 1-4	35
Rusty Song Sparrow 1-4	18
Abert's Towhee 1-3	70
Red-headed Merganser 1-1 (American col.)	35
European Coarser 1-2 (Canary Islands)	3 00
Lesser Black-backed Gull 1-2 (Scotland)	35
Gold Crest (England) 1 7	1 50
Long-billed Curlew 1-1	40
Oregon Chickadee 1-4	55
Purple Grackle n-4	40

Many others. Lists free.

BENJAMIN HOAG,
Stephentown, N. Y.

IT IS SPREADING LIKE WILD FIRE!

What?

The American Society of Curio Collectors.

A NATIONAL SOCIETY for collectors of shells, fossils, minerals, Indian relics, war relics, historical articles of all kinds, coins, medals, antiquated paper money, autographs, bird's eggs, mounted birds and animals, insects, flowers, marine and land curios of *all kinds.*

Monthly Official Organ with large exchange department.

Free Identification Bureau.

Quarterly Bulletin for members only.

Initiation fee, 10c. Yearly dues 25c.

For Application Blank and further information address,

ALLEN JESSE REYNOLDS, Sec'y,
2015 Grand Ave., Connersville, Ind.

Mention Oologist.

THIS PAPER is printed at the Book and Magazine Publishing House of A. M. EDDY, Albion, N. Y.

$5.00 for only 50 cents.

For 1901 Subscribers of THE OOLOGIST only.

While "taking inventory" we found many items in very large quantities—enough to last the ordinary Curio Dealer a life-time and in such quantities that we cannot job them off to dealers except at a sacrifice—and rather than give dealers the benefit of the same we prefer and have concluded to give this benefit to the 1901 subscribers of the OOLOGIST. Those who have paid their subscription to the OOLOGIST for 1901 or who remit for same when accepting this "$5.00 for 50cts" offer —we will send by express at their expense (we can send prepaid for 25cts.) all of the specimens and books listed below for ONLY 50cts.

1. Chinese Horn Nut, China ..... $ 05
2. Egg of Skate or Sand Shark, Martha's Vineyard 05
3. Clay Police Whistle, Mexico 10
4. Black-Mouth Tree Snail, Pavillion Key, Fla 25
5. Purple-spined Sea Urchin, Gulf of Mexico 25
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10. Four Gem Stones (Red Agate, Black Onyx, Crocidolite and Sardonyx Intaglio) cut and polished 40
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19. Banded Murex Shell, Med. Sea 15
20. Money Cowry Shell, Hawaii 10
21. Cone-in-Cone, Chautauqua Co., N. Y. 15
22. An Exchange Notice Coupon 20
23. Lattin's "Catalogue of N. A. Birds Eggs" 15
24. Short's "Birds of Western New York." 1
25. Tassin's "Directions for Collecting Minerals" 05
26. A copy of "Penikese" 35
27. Five assorted Bird, Animal and Flower Pictures, my selection, size 6x8 in., beautifully colored, true to nature 30

$5 00

No changes or alterations of any kind can be made in this offer—you either accept or not as you may elect. The offer is no fake nor catch penny scheme but is made as stated and in good faith in order that *many* may share in the benefit which would otherwise fall to a few, and incidentally to increase the OOLOGIST's subscrition list. This premium offer cannot be duplicated for double what it costs the 1901 subscribers to the OOLOGIST by any dealer in America—the publisher of the OOLOGIST included—after present supply is exhausted.

REMEMBER. 1st. That if your subscription to the OOLOGIST is already paid through 1901 you get the entire lot of specimens, etc, offered above for only 50cts. But if you wish them sent prepaid you must send 25cts. additional or 75cts. in all.

2d. If you have not subscribed for the OOLOGIST for 1901 and wish to accept this offer you must send 50cts. for OOLOGIST with coupon for 1901 and 50cts. for this offer or $1.00 and if you want the lot sent prepaid add 25cts. more or $1.25 in all.

3d. This offer is made in connection with a subscription of the OOLOGIST only. The paper and premium can be sent to the same or different addresses as desired. In case you wish the premium without the OOLOGIST or wish to secure a second premium the price will be $1.00 or $1.25 if sent prepaid.

Remit in most convenient manner. Address plainly and in full.

FRANK H. LATTIN, ALBION, N. Y.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 2. ALBION, N. Y., FEB., 1901. WHOLE NO. 173

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No. 173 your subscription expires with this issue
175 " " " " Apr., 1901
180 " " " " Sept., "
184 " " " " Dec., "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

"I am sending you payment for the enclosed adv. to be inserted in the next issue of the best advertising medium I know of-THE OOLOGIST." W. LEE CHAMBERS, Santa Monica, Calif.

WANTED.—Copy of March, 1893, OOLOGIST. Will give 4 different back No.'s OOLOGIST. JOHN D. CURRIE, 1210 Yale Place, Minneapolis, Minn.

TO EXCHANGE.—With Twin City collectors sets 343, my collecting JOHN D. CURRIE, 1210 Yale Place, Minneapolis, Minn.

WANTED FOR CASH.—Will give cash for desirable sets. Send your lists at once, with lowest cash price. Many common sets wanted. W. LEE CHAMBERS, Santa Monica, Cal.

GIVEN.—A nest 20 ft. out on a limb. Problem: To get the eggs. Solution: Nowell's Collectors' Tool. Drop him a card for circular.

WANTED FOR CASH.—First-class sets of game birds, (particularly large sets) Ducks, Geese, Grouse, Partridges, etc. Send list and lowest cash prices; also quote fine sets of any North American birds. J. L. CHILDS, Floral Park, N. Y. 174

FOR SALE in the flesh during Feb., March and April: Common Cormorats. 75c to $1 25; Gt. Am. Sheldrake, 30c to 75c; Golden Eyes, 25c to 40c. ALVAH G. DORR, Taxidermist and Fur Dealer, Bucksport, Maine.

WANTED.—Ridgeway's Birds of Illinois, Vol. II. Will pay cash. ISAAC E. HESS, Philo, Ills.

WANTED.—Orders for choice sets of California birds' eggs. To be collected during the season of 1901. J. S. APPLETON, Simi, Ventura Co., Cal.

PHEASANT EGGS FOR HATCHING.—On and after May first I will be ready to supply settings of Mongolian Ring Neck Pheasants. Settings of 15, price $4. Orders booked now. A. W. PERRIOR, 1409 So. Salina St., Syracuse, N. Y. 174

FOX, MOUNTED.—To exchange for Nat. History books, printing press, money, back No.'s Auk, Taxidermist, etc. Write for photo, describing what you have. Also have Hamilton 22-cal. rifle for Hornaday's or Rowley's Taxidermy. J. D. ANTHONY, Waubeek, Iowa.

NOTICE.—Send your catalogue of Insects, Sea Curios, Reptiles, Birds, Minerals, etc., to EDWIN H. REIBER, 160 Champlain St., Rochester, N. Y.

WANTED.-Collectors throughout the United States and Canada to collect for me scientifically birds' eggs in sets, with full data, at ½ Lattin's catalogue rates. DR. M. T. CLECKLEY, 457 Greene St., Augusta, Ga. 175

COMBINATION OFFER.—While they last I will sell Cal. Brown Pelican ½, Cassins' Auklet 1-1, Western Gull ½. Annas' Hummingbird n-2, Costas' Hummingbird n-2, for $2.40. Remember all extra fine sets, with complete data. If you wish to buy them singly write me. W. LEE CHAMBERS, Santa Monica, Cal.

EXCHANGE.—I have large lot of sets and singles of Mounted Birds and Skins, Ornithologist and Stamp Magazines. I want Eggs, Skins, Mounted Birds, etc. Send lists, all answered. W. JENNINGS WIRT, Box 137, Gaines, Orleans Co., N. Y.

ARIZONA SKINS FOR EXCHANGE.—I have just received a lot of Arizona skins, which I will offer in exchange for any a-1 sets not in my collection. Among the lot are Rivoli Hummingbirds, Gracies Warblers, Elf and Pigmey Owl, Black-vented Shearwaters, Mt. Plover, ect. W. LEE CHAMBERS, Santa Monica. Cal.

OSPREY'S EGGS richly marked and a-1 data; 3-4 60c per egg, 10-3 45c per egg, 4-2 40c per egg, 3-1 30c per egg; 12 second-class singles 10c per egg; Sharp Shinned Hawk, 3 heavily blotched singles $1 per egg; 1 4 x 5 Vive camera holding 12 plates $5. All postpaid. For sale or exchange. J. B. NEWTON, Unionville, Ct.

EXCHANGE.—The season for collecting is now here. Are you supplied with data blanks? I am furnishing a number of collectors with these desirable books. 100 datas, with stub attached, size 3 x 6, stub 2½ x 3, extra quality paper, at 50c per 100. In exchange for desirable sets. Write me and send list. Satisfaction guaranteed. GEO. W. MORSE, Box 230, Ashley, Indiana.

EXCHANGE.—I have a list of over 200 sets with full data to exchange for sets not in my collection. These sets are from California, Arizona and Texas, and I can supply most any common sets from these localities along with a great many rare ones. Send lists to W. LEE CHAMBERS, Santa Monica, Cal.

FOR EXCHANGE.—West Indian land shells, also several cases and drawers suitable for eggs or shells, desiderata shells, curios, etc. T. Q PRIDDEY, 371 Carlton St., Toronto, Canada.

EXCHANGE.—In exchange for desirable sets with data, some back No.'s of Sports Afield, Gameland Recreation, Art and Nature, Outing, The Taxidermy, Collectors' Monthly, OOLOGIST, Bird Lore, and Osprey Write me your wants and send list. GEO. W. MORSE, Box 230, Ashley, Indiana.

EXCHANGE.—I will exchange Cameras, Kodaks, Rifles, Revolvers, Bicycles of any make you may want that is a standard wheel, or anything in the sporting goods line for rare sets of N. A. birds' eggs not in my collection. Or will sell the above for part cash and take the balance in eggs. W. LEE CHAMBERS, Santa Monica, Cal.

TO EXCHANGE.—Indian Relics, Marlin Rifle, 32 Cal. with tools. Stamps, 75 Stamp papers, Telescope, Eggs, Books, etc. Want Banjo Music. Typewriter, Hammerless Shotgun, Stevens Rifle, Pistol. Mounted Birds or tobacco tags. F. H. RICKER, Box 38, Lisbon, Me.

NEW TURNEY Coaster brake and hub Century Gas Bicycle Lamp, used twice, Medical Record for 1900, Phila. Medical Journal for 1900. What offers in mounted birds, etc. DR. A. E. PAYNE, Riverhead, N. Y.

TAXIDERMIST'S OUTFIT:—Contains one heavy Cartilage Knife; 1 nickeled and engraved Scalpel with tip shaped for detaching skin, muscles, &c; 1 pair Scissors; 1 pair Forceps; 1 Dissecting Hook; 1 Brain Spoon; 1 pocket Wire Cutter. Instruments best, all packed in polished Hard-wood Case. A *better* outfit than the one always sold at $3. I have only two outfits and will close them out at only $2.20 *prepaid*. FRANK H. LATTIN, Albion, N. Y.

WANTED.—Osprey, Hummers. Hawks, Warblers and all N. A. birds' eggs in choice sets, large series even of common species. Pay cash or good exchange in books. magazines, oologist tools and supplies. bicycles, guns, fish rods and tackle. cameras, field glasses, in fact almost any article for outdoor sport or nature study. Send lists, quote lowest prices if you want cash or state what you want in exchange. I can save you money if you want to pay cash for any of above articles. BENJAMIN HOAG, Stephentown, New York.

"Would say my ad. in OOLOGIST for unmounted sea mosses has brought me specimens enough to cover a surface 12 ft. square. I think the OOLOGIST is the best advertising medium for collectors in America." WM. CUDNEY, Galt, Ont.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

OOLOGISTS WANTED:—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

WANTED:—Will pay cash or "swap" eggs of American Osprey and Hummingbirds (any species with nest). Two good skins of each the Am. Barn and Long-eared Owls, Rattlesnake Rattles, Eggs of Hammerhead Shark. Write what you have and what you want. FRANK H. LATTIN, Albion, N. Y.

I send you today some ads for your excellent paper. I must say that ads in your paper always pay.—CHRIS P. FORGE, Carman, Manitoba.

HEAR YE! Hear Ye! Hear Ye! This is to certify that my advertisements in the OOLOGIST have paid me better than have the combined ads. in most of the amateur and natural science papers. Ads. in the OOLOGIST always bring returns, and it is safe to say that there is no paper having three times the circulation of this widespread periodical which can give equal satisfaction. MORRIS GIBBS, M. D., Kalamazoo, Mich

PLATE HOLDER—Double, 5½x5½. Blair Camera Co., ($1.00), prepaid 34c. FRANK H. LATTIN, Albion N. Y.

CODDINGTON MAGNIFIER (Miners' glass), diameter ⅝in, cost $1.50, prepaid 95cts. FRANK H. LATTIN, Albion, N. Y.

"SNAPS" for taxidermists. 7in Stuffers, spring handle (1.25), 80c; Scissor-handle Stuffers, 12in. ($1.75), $1.05; Scissor-handle Stuffer, 15in, ($2.50) $1.60; Bone Cutters, extra fine and heavy, ($2.50) $1.60; Forceps for Insects ($1.25) 78c; Botanical Collecting Can with shoulder strap, size 12x7½ x3½ in. ($1.50) $1.10; Tenaculum or Dissecting Hook, folding in handle ($1) 28c. All *prepaid* at prices quoted, regular prices in ( ). FRANK H. LATTIN, Albion, N. Y.

"I don't know whether my ad. has reached its time limit yet or not, but stop it any way. My supply of exchange material was exhausted some time ago and replies to the ad. still come in. F. P. DROWNE, 20 Benefit St., Providence, R. I.

MAYNARD'S "Birds of Eastern North America". This elaborate work was published about 25 years ago at $18 00 and contained 532 pages. I have three parts of this valuable work. each containing about 300 pages (over ½ of original) bound in tag-board covers. The Thrushes, Warblers, Starlings, Water Birds and Shorebirds are complete, will sell at only $3.00 per copy prepaid. I also have 3 copies each containing about ¼ of original work at $1.00 per copy prepaid I have 10 of original hand-colored plates at $1.50 for lot. Sample pages of work for stamp. Style of text see article of "Black Duck" in Dec. OOLOGIST. FRANK H. LATTIN Albion, N. Y.

WANTED —Buyer for mounted specimens in pairs of Peafowls, Pigeons, Pheasants, Loons, Wild Ducks, Squirrels, Blue Jays, one Golden Eagle, (fine) Owls, Hawks. All first-class. Make an offer. MISS LEAH BERKHEIMER, Imler, Bedford Co., Pa.

COLLECTION 1,100 varieties foreign and American stamps. $10 cash or half exchange. Thousands Columbians and common Americans. Approval sheets 25 per cent. discount for cash. Several books—Travel, Story and Historical. Eighty OOLOGISTS, Stylographic Pen, Punch and Judy Whistles, Peachpit Monkeys. Want Scientific and Biblical Books or cash. Let's exchange lists anyhow. ARTHUR L. THORNE, Sonyea, Livingston Co., New York.

FOR SALE.—1 complete file of each Osprey and Natural Science News; 1 copy each Nov., Dec. 1897, Jan. 1898. Osprey; *Nidologist*, Vols. 2 and 3 complete, Vol. 4, 9 numbers, 1 copy each Sept. 1894, May, Sept., Oct. 2, Dec. 1895; *Museum* Vol. 2 complete, 1 copy Apr. 1895, 2 Dec. '95, 3 Mar. '96, 1 Nov. '96, 1 Aug. '97; *Oregon Naturalist* Vol. 2, Nos. 6 to 12 inclusive, Vol. 3 complete, 1 copy Feb. 1896; OOLOGIST Vols 11, 12, 13, 14, 15, 16 and 17 complete, 1 copy each Mar., Sep., Oct, Nov., Dec. '94, Aug., Sept., Dec. '95, Feb. '96 Nov., Dec. '97, Jan., Nov. '98, Feb. 1900; *Bulletin Michigan Ornithological Club* Vol 2 complete, Vol. 3, Nos. 1 and 2, Vol. 1, No. 2; *Bulletin Cooper O. Club* Vol. 1, Nos. 1 and 2; *Popular Science News* Vol. 30, Nos. 6 to 12 inclusive, 1 copy each Feb., Mar. 1897; *Bird Lore* Aug. 1899; 1 copy "Birds of Michigan." L. B. GILMORE, Blooming Valley, Crawford Co., Pa.

NATURALISTS ATTENTION!—Send postal for rock bottom prices on all kinds of naturalists' and collectors' supplies. Can supply any thing in the line at right prices. Naturalists' Supplies, 2102 Arch St., Phila., Pa.

WANTED.—A No. 1 sets of 27, 29, 63, 133, 225 and 226 from the original collector. I will give exchange in sets or cash if reasonable. W. H. BINGAMAN, Box 151, Algona, Iowa.

WANTED.—Am. sets with data. Have many Brit. sets. or will collect this season if wants and prices are stated early. J. GORDON, Corsemalzie, Whauphill, Wigtownshire, Scotland.

FOR SALE.—The following for sale cheap: 443 1-4, 1-3 at 5c, 506 1-4 at 4c, 316 1-2 at 2c, 552 1-3 at 2c, 593 1-3 at 3c, 633 1-3, 1-4 at 5c, 703 1-4 at 2c. All eggs first-class, with datas. The above prices are per egg. ADOLF SHUTZE, 1611 Sabine St., Austin, Texas.

WANTED.—Back numbers of Osprey, Nidologist, Avifauna Bird Lore Condor Vols. 1 and 2, and many others. Send full list and exchange price. I can offer in exchange eggs, skins, mounted birds and magazines and stamps. W. JENNINGS WIRT, Gaines, Orleans Co., N. Y.

FOR SALE.—Whippoorwill 1-2 $1.20, Swainsons Hawk 3-3 55c, Gannet 1-1 20c, Fulmar 1-1 20c, Northern Phalarope 1-4 90c, Magnolia Warbler 1-4 75c. Prices are per set, prepaid. I will swap any of the above for sets of Am. Osprey or raw furs. JAS. O. JOHNSON, Southington, Conn.

WANTED.—One hundred yearly subscriptions to Recreation at 75 cents each. JAS. O. JOHNSON, Southington, Conn.

FOR SALE.—The following first-class singles for sale cheap: 6 at 10c, 47 at 50c, 49 at 20c, 51 at 20c, 51a at 20c, 53 at 20c, 54 at 20c, 58 at 20c, 59 at 35c, 63 at 20c, 69 at 10c, 70 at 10c, 71 at 10, 72 at 15c, 74 at 10c, 77 at 10c, 80 at 10c, 120a at 25c, 126 at 20c, 132 at 20c, 140 at 20c 142 at 30c, 146 at 35c, 160 at 20c, 188 at 35, 191 at 20c, 199 at 10c, 200 at 10c, 201 at 10c, 202 at 10c, 203 at 15c, 211 at 10c, 214 at 10c, 219 at 10c, 220 at 15c, 221 at 8c, 261 at 35c, 263 at 15c, 289b at 10c, 294 at 10c, 300 at 15c, 305 at 20c, 316 at 3c, 325 at 50c, 326 at 50c, 333 at 30c, 336 at 35c, 337 at 50c, 337b at 50c, 341 at 50c, 360 at 20c, 368a at $1, 373b at 40c, 378 at 15c, 385 at 25c, 387 at 10c, 390 at 20c, 394a at 50c, 412 at 5c, 413 at 10c, 406 at 8c, 443 at 10c, 444 at 3c, 447 at 5c, 452 at 10c, 458 at 15c, 461 at 10c, 477 at 5c, 481 at 20c, 493 at 10c, 495 at 3c, 495a at 10c, 497 at 3c, 498 at 3c, 506 at 6, 507 at 6c, 511 at 5c, 511b at 5c, 512 at 5c 513 at 10c, 560 at 3c, 563 at 3c, 567b at 75c, 581 at 2c, 587 at 10c, 593 at 5c, 594 at 35c, 601 at 10c, 604 at 5c, 610 at 25c, 611 at 10c, 612 at 5c, 613 at 5c, 622 at 5c, 622a at 5c, 624 at 10c, 627 at 15c, 630 at $1, 633 at 10c, 652 at 5c, 683 at 5c, 713 at 10c, 705 at 3c, 703 at 5c, 704 at 3c, 719 at 25c, 721a at 10c, 725 at 5c, 731a at 75, 735a at 50c, 761 at 3c, 761a at 10c, 766 at 5c, 767 at 10c, 768 at 10c. The above mentioned prices are per egg. Any party sending me $2.50 may select to the amount of $4.50 from the above list. I have only a few eggs and of some only one of the above mentioned, as I am closing out my collections of singles. All eggs are strictly first-class. Small orders also accepted. ADOLF SCHUTZE, 1611 Sabine St., Austin, Texas.

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A NATIONAL SOCIETY for collectors of shells, fossils, minerals, Indian relics, war relics, historical articles of all kinds, coins, medals, antiquated paper money, autographs, bird's eggs, mounted birds and animals, insects, flowers, marine and land curios of *all kinds*.

Monthly Official Organ with large exchange department.

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Initiation fee, 10c. Yearly dues 25c.

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The Student's Shell Collection

This Collection contains Forty Small Shells collected from all quarters of the Globe, all of which are numbered to correspond with a catalogue, which gives their proper, common and scientific names, with the locality where found. These shells when purchased individually and properly labelled would cost from 2 to 25 cents each. The following are the specimens found in this collection:

Scorched Murex, Thorny-nosed Murex, Fish Basket, Gem Shell, Inflated Olive, Lettered Olive, Rice, Dove, Thunder Storm, Pelican's Foot, Ringed Cowry, Snake-head Cowry, Money Cowry, Rye, Porcelain Rump, Boat, Worm, Brown Snail, Yellow Pea, Beaded Tower, Tower, Bloody Tooth, White Tooth, Zebra, Wheel, Venetian Snail, Key-hole Limpet, Many-lined Bulimulus, Hunch backed Partula, Black-mouthed Tree Snail, Banded Tree Snail, Little Agate, Silk Worm, Pea Nut, Banded Melampus, Indian Wampum, Angel Wing, Sun, Scallop and Jingle. Price $1.00.

FRANK H. LATTIN, Albion, N. Y.

THE OÖLOGIST.

VOL. XVIII. NO. 2. ALBION, N. Y., FEB., 1901. WHOLE NO. 178

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

TERMS OF SUBSCRIPTION:

Single subscription.....50c per annum
Sample copies.....5c each
The above rates include payment of postage.

Each subscriber is given a card good for a Want, Exchange or For Sale Notice. (This card is redeemable at any time within one year from date thereon.)

Subscriptions can begin with any number. Back numbers of the OOLOGIST can be furnished at reasonable rates. Send stamp for descriptions and prices.

☞Remember that the publisher must be notified by letter when a subscriber wishes his paper stopped, and all arrearages must be paid.

ADVERTISING RATES:

5 cents per nonpareil line each insertion.
12 lines in every inch. Seven inches in a column, and two columns to the page.
Nothing inserted for less than 25 cents. No "special rates," 5 cents per line is "net," "rock bottom," "inside," "spot cash" rate from which there is no deviation and no commission to agents. If you wish to use 5 lines or less space it will cost you 25 cents; 100 lines, $5.00; 1000 lines, $50.00. "Trade" (other than cash) advertisements will be accepted by special arrangement only and at rates from double to five times cash rates. Due Bills and Cards payable in advertising will be honored only at regular rates in force at the date of issuance of said bill or card.

Remittances should be made by Draft, Express or Postoffice Money Order, Registered Letter or Postal Note. Unused U. S. Postage Stamps of any denomination will be accepted for sums under one dallar. Make Money Orders and Drafts payable and address all subscriptions and communications to FRANK H. LATTIN, Albion, Orleans Co., N. Y.

ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

* The Birds of Michigan and Their Protection.

Members of the Agassiz Ass'n:—

I am requested to address you on the subject of bird protection, and gladly accept your kind invitation. For the purposes of the present discussion, birds may be divided into two classes: First, game birds; second, birds that are not considered game. By game birds I mean edible birds, the pursuit and taking of which affords sport for the gunner. There are several species of birds, however, that are edible and that never should be killed by sportsmen because of their beauty, or their quality as songsters, or their value to agriculture as insect eaters. The birds which may be properly classed as game birds, and which are found in your state are: Web-footed wild fowl, the Grouse family, the Sand pipers, the Plover family, the Snipe family, the Quail family, the Curlew family.

The Wood Duck is usually classed as a game bird and is eagerly pursued by sportsmen, but as a matter of fact, it should never be killed. Within the past few years it has become exceedingly rare and is threatened with early extinction. Still it is one of the most beautiful plumage birds on this continent. Its economic value as an article of food is so small that it should never be hunted or shot at by any true sportsman. I hope to live to see the time when all states will have laws protecting the Wood Duck, for all time to come.

In fact, all migratory water fowls are threatened with extermination and unless all states and all Canadian provinces speedily enact and enforce pro-

* A paper addressing Chapter 176 Detroit B., Agassiz Ass'n.

tective laws, a dozen species of ducks will disappear from the continent within ten years. Under present conditions the Indians in the far North hunt the nests of the mother birds and destroy the eggs by thousands. Almost as soon as the young are hatched, and before they are able to fly, these savages pursue and kill them with clubs. A native will eat at a single meal, a dozen young wild geese, none of which are perhaps larger than his fist; while if they were let alone any one of them would make a good, square meal six months later.

As soon as the young water fowls are able to fly they, with their parents start on their southern migration. When they cross the border into Michigan, Minnesota, N. Dakota, Montana, or Washington, an army of sportsmen assail them. As the winter season advances, the birds move south and at every stopping point they encounter a new division of this army of shooters. Even when they reach their winter feeding grounds, about the Gulf of Mexico, they are still pursued and slaughtered.

A still more savage enemy greets them at the International boundry. I refer now to the market hunters. These men move south with the birds, clear into the gulf states; camp with them all winter and then follow them north to the International boundry line again on the spring flight.

A game dealer in Chicago, for instance, receives a shipment of wild geese and ducks from a market hunter in Minnesota or N. Dakota in August. In September he receives another shipment from the same man 100 miles farther south. He keeps on receiving daily or weekly shipments from this same man, clear down from the Mississippi Valley into Louisiana or Texas, all through the winter. Then the shipments begin to come from a point farther north and continue with unceasing irregularity through March, April and up into May, the last shipment coming again from N. Dakota or Minnesota.

Is it a wonder therefore, that between the warfare kept up by these sportsmen and their gorilla allies, the water fowl should steadily decrease from year to year? The wonder is that they have been able to withstand these terrific onslaughts so long. It is only because they are such prolific breeders, and in spite of this they are doomed, under the existing circumstances. The remedy is for shorter open seasons. These should be limited to 30 days.

Second: The season should open on the same day and close on the same day in all states within given parallels of latitude. For instance, in all states north of the 40th parallel the season should open Sept. 1st and close Sept. 30th. In all states south of the 40th degree, and north of the 35th degree, it should open Oct. 1st, and close Oct. 31st. In all states on or south of the 35th parallel it should open Nov. 1st and close Dec. 31st. I would accord the extra 30 days of open season to the Southern states because in some seasons the water fowl would not reach these states until late in November, or even in December.

Third: All states should pass laws limiting the bag for any one shooter to ten ducks and three geese for any one day, and to fifty ducks or fifteen geese for any one year.

Fourth: The sale of game of all kinds should be rigidly prohibited at all times. The broad principle should be established that game is and should be the property of the man who can go afield and kill it. He should be permitted to give to his friends, to a reasonable extent, but not to sell to any one.

Fifth: A rigid and impartial enforcement of game laws everywhere and at all times.

Much that has been said as to the

protection of water fowls applies with equal force to all birds of the Grouse family, to Woodcock, Quail, and to the Snipe and Plover families.

Laws should be made to open on all kinds of game on a given day and close on all kinds 30 days later, and the man found in the woods, in the fields, or on the waters with a gun, at any other time of the year, that fact should be considered prima facie evidence that he has violated a game law or is trying to do so, and he should be liable to a fine of not less than $10 on conviction.

The following species are habitually pursued by many sportsmen, but are not game birds, and (with the exception of two species of Hawk) should never be killed: Hawks, Owls, Blackbirds, Gulls, Pelicans, Cranes, Loons, Ibises, Egrets, Cormorants, Bitterns, Herons, Doves, Eagles, Woodpeckers, Robins, and Meadow-larks.

Much that has been said as to the protection of game birds applies with equal force to song and insectivorous birds Many of these are killed and eaten—not, I am glad to say, by real sportsmen, but in many cases by men who pose as such. The greatest enemies of song, insectivorous and plumage birds are the Italians and other foreigners who live in the great cities. An army of these men go out of every great city every Sunday morning during at least eight months of the year with cheap shotguns, and kill every bird they can find, no matter of what kind. Robins, Thrushes, Orioles, Tanagers, Blue Jays, Pewees, Song Sparrows, Blue-birds—all go into the Dago's bag; then into the pot and from there into his rapacious maw.

Many states have enacted laws prohibiting the killing of song birds at any time of year, but unfortunately such laws are not enforced as they should be The remedy for this lies in a greater number of game wardens and of more vigorous action on the part of all bird lovers. There should be at least one in every county of this state, and if one could be provided to each township, so much the better. The minimum fine for killing a song bird or an insectivorous bird should be $25 Half of this should go to the game warden, and in addition he should be paid a salary which would warrant him a comfortable living.

Another great enemy of song birds, and especially those classed as plumage birds, is the market hunter. This man kills and skins the small birds for millinery purposes. He also kills thousands of plumage birds, such as Egrets and Ibis and plucks a few plums from each and leaves the bird to rot In many cases he kills the mother bird and a brood of young are left on the nest to starve to death. All this infamous traffic should be suppressed, as speedily as possible.

All states should prohibit the wearing of skins or plumage of birds on hats. A few of the states have already passed laws to prohibit the killing and selling of such birds for such purposes, but this does not cover the case. The way to remedy an evil is to strike at the root of it. Let us destroy the market for bird skins, and bird feathers, then the vandals who are slaughtering these birds finding their occupation gone, will have to go at somethidg else. If they are too lazy to work, let them go to stealing horses and they will soon land in the penitentiary, where they should have been long ago.

Let it be considered the duty and the privilege of every friend of bird protection to condemn and decry, at every opportunity, the habit of certain women of wearing bird skins or plumage on their hats. The only hope of saving from total extinction the many species of birds in this country, lies in the rapid creation of a strong public sentiment against the millinery traffic in bird skins.

This warning is not the result of im-

agination or of speculation. It is the result of a careful and thorough study of the subject extending over a period of 30 years. I have travelled over nearly every state and territory in the Union, and have personally seen the Praire Chicken and the Wild Turkey swept almost entirely from the great state of Illinois. I have seen the Ruffed Grouse and the Quail almost entirely wiped out of the state of New York. I have seen the Woodcock driven to the verge of exterminatian throughout all the New England States. I have seen the Wild Pigeon swept from the whole United States and I have seen practically all species of birds reduced in numbers from 25 to 50 per cent. all over the continent.

It was principally and primarily for the purpose of arresting this terrible slaughter that the League of American sportsmen was organized. Men, women and boys are eligible to membership in this League and all such who are at all desirous of seeing the beautiful feathered creatures remain on earth, should join the League at once and aid us in saving them.

G. O. SHIELDS,
New York City.

Bird Music.

(Concluded).

We have no regular night singers in the Great Lake Region, so far as I am able to learn, and in this respect America does not equal England, which has several nocturnal songsters, one of which excels as a musician. The famous English naturalist, Gilbert White, records three species which sing at night in the British Isles. They are the Reed Sparrow, which sings among the reeds and willows, the Woodlark, singing in mid-air, and the Nightingale, as Milton describes it,—

"In shadiest covert hid."

There are several species of owls which roll forth or screech out their notes at night, and also numerous shore birds and water-fowl that issue their varied calls, and, especially these latter are partial to night travel, spring and autumn. Then too our Whippoorwill confines his singular but monotonous jargon to the hours of darkness, while the scream of the Nighthawk more often breaks on the ear between the setting and rising of the sun. But these birds are not strictly speaking, songsters, although their notes undoubtedly fill their requirements as to harmony and expression.

The plain, domestic little Chipping Sparrow sometimes favors us with its simple chatter in the darkest night. The notes hardly deserve the name of song, but heard issuing from the surrounding gloom, the simple refrain commands our attention from its oddity at the unusual hour. The Wood Pewee not rarely quavers forth its plaintive offering, sounding in the depth of night like a wail from a departed spirit. This favorite songster is a remarkably early riser, as he is also late in going to rest, and I have sometimes thought that his musical efforts at night were the result of an error on his part—an idea strengthened by the fact that the notes are rarely heard more than once or twice during the night, and moreover the song is only occasional, and only in the nesting season.

Other species which are heard to burst forth in ecstatic melody, are the Swainson's and Hermit thrushes. If I could describe the songs of birds, so that other bird-lovers could understand them as I do, I would feel that a partial acknowledgement had been made to the divine melody issuing from these bird's throats.

The Cuckoo also sings at night, or at least bubbles out its peculiar emphasised jargon, and which is called a song out of courtesy rather than from any real merit. Both species, the Black-

billed and Yellow-billed cuckoos favor us, but the former is more abundant.

We often hear that the best singers are the ones of plainest dress, but this is assuredly not so in all instances. If one is permitted to listen to the sweet refrain of the Scarlet Tanager in the night, it will be acknowledged that the brilliant coat of the songster does not compare in point of excellence to the owner's divine song.

These birds are the only ones at the north that I am acquainted with that sing during the hours of darkness, and not one of them is a regular singer in the night. Information has reached me from no less an authority than Mr. Robert Ridgway of Washington, to the effect that the Yellow-breasted Chat is a performer in darkness.

Among birds, the females do not sing, and although many species have musical call-notes and agreeable tones in conversation, which are shared in by both sexes still the true song is only rendered by the male bird I am sincere in saying that the lady bird talks more than her mate about the house, but I will admit that when away from home she is very discreet in this respect. In attending to her duties of incubation she is very quiet, and it is seldom that a note is heard from her while on the nest. It has been said that all birds are silent when incubating, so as to avoid observation, though most species are quiet when setting, there are a few which chirp loudly when so engaged, and some even burst into exuberant song.

Few observers are aware how assidous are the attentions of the two birds to one another during incubation, and the credit which is due to the father-bird in his devotion in covering the eggs in his mate's absence is not allowed him.

Of course, when a bird is heard singing on the nest we know that the notes come from the male, but many young observers are inclined to attribute it to the female. Another source of error in failing to identify the sex occurs with those species in which the male assumes the plumage of the female until the second or third year.

The Chipping Sparrow sometimes sings his chattering refrain while upon the eggs. Yellow Warblers are not rarely heard singing from the nest, but one has to wait patiently in a neighboring copse, at the proper season, in order to see, hear and be convinced.

I have once heard the Maryland Yellow-throat's song from its concealed nest in the grass; in fact I found the nest, from hearing the peculiar notes, almost at my feet. Several times the song of the House Wren has reached me, coming from the cavity where the old bird was setting solacing himself in his cavernous nesting spot.

Once, each, I have heard the notes of the Black-billed Cuckoo, Scarlet Tanager, Orchard Oriole, Goldfinch, Rose-breasted Grosbeak, and the Hermit Thrush, the latter the only thrush whose song has positively reached me from the nest. One would think that the Brown Thrush, Catbird, and Robin, as great singers, would burst forth on the nest, but it must be borne in mind that these thrushes prefer higher perches for singing, while the Hermit is a ground nester and often sings on the ground.

But of all the species which are musical while setting, the Warbling Vireo heads the list, both for persistence and for beauty of song, according to my note-book. Anyone can listen to the song of the Warbling Vireo on the nest if the trouble is taken to find a nest with eggs in May or June. For when the mate takes his trick keeping the eggs warm, he cheers himself, and enlivens the surroundings by pouring forth his rippling, inspiring melodious warble. I have heard him sing from the nest in early morning; in the hot-

test part of the day, and in the early twilight, and I have heard him issue as many as twenty bursts of song during one spell on the nest, and have discovered the nest on more than one occasion by the sweetly modulated tell-tale song.

These species are all the birds I have found to sing while on the nest.

MORRIS GIBBS,
Kalamazo, Mich.

Field Notes from Manitoba.

While reading the articles in the Jan. 1901 OÖLOGIST I noticed an article on the use of old nests, which suggested to me, adding a few notes on my experience regarding the use of old nests by Hawks and Owls.

Before I became a resident of this glorious western continent, from my early boyhood days, I could find no greater enjoyment than a ramble in the woods, lanes and fields of old England, and I found many a set of Sparrow Hawk, Kestrel and one each of the Merlin, Hobby and Long-eared Owl. All these gala days are as fresh in my memory as if they had happened but a week or so ago, and I well remember with what joy I returned home with my first set of four beautiful Sparrow Hawk's eggs taken from a nest in a larch (tamarac) wood. How long I watched that nest. Five weeks elapsed from the time I found it until I finally brought home the set of four eggs. The nest was built by the birds themselves and was a large flat structure of larch twigs in a shallow depression of which lay the prettiest set of Sparrow Hawk's eggs I ever was fortunate enough to find. Many a set of Sparrow Hawk's eggs I took after that but I never got another set one-half so handsome.

Again, quite fresh in my memory is the chalk quarry in Lincolnshire where I flushed a Merlin from her nest on my return home from a day's collecting, and how on the following evening with my brother and an oölogical friend and a wagon rope I came back determined to add to my collection a new species of eggs. The rope made fast to a stake well driven in the ground I descended and there in a slight depression on a ledge in the chalk cliff resting on a bed of a few blades of withered grass I espied a lovely set of five Merlin eggs.

On another fine May day I visited a larch wood at a distance from home, and in a tall pine from the very top I took from a Crow's nest I had robbed but two weeks previously a handsome set of Hobby's eggs and in descending unfortunately broke one of them.

But it it about the nests of our own Manitoba that I intended to write so must forget for the present these pleasant memories of boyhood days. It was on the 15th day of June, 1887 that my residence in the great West commenced, and I at once began to investigate, although only in the last two years have I been able to make a specialty of oölogical rerearch.

The first nest of the Red-tail I found was found that summer. It was the 1st of July and three well fledged young birds were its occupants. The nest was in a small oak 25 ft. up in a main fork of the tree but I could not tell if it was new or old as it had been occupied so long. The next nest of this species I examined was in a lone thorn tree way out in the boundless prairie miles from any bush on the side of a creek where the birds lived royally on the marsh birds that abounded on the creek and in the neighboring swamp. This nest also contained three well fledged young, and was used year after year for four years to my certain knowledge. This was from 1890 to 1894, the last time I was at the place. I intend to visit this place the coming spring to see if the Hawks are still breeding there.

In the spring of 1893 I went for a ramble in the woods west of Carman.

It was the 1st of May, and in an old Red-tail's nest on an overhanging limb of a large oak tree near a shallow creek I found a family of Western Great Horned Owls. There were three of them and I took them all. All were different in size; I kept them for two months and got some very interesting notes regarding them. I then gave them their liberty. On the 15th of May the same year I took three Red-tail's eggs from this nest. It had been slightly repaired and a few green leaves added.

But I must pass on to the past season and describe some of the takes noted down during the months of April, May and June.

My first find was on April 6th (this is very early here) in heavy oak bush at Salterville amongst scattered trees. On the outside of the bush I located a nest of Krider's Hawk. This was an oid nest and has been used for three successive years. On April 2d I had taken two Western Great Horned Owl's eggs from this nest. The nest was repaired and a lining of bark, grass and leaves added. It was between 35 and 40 feet up in oak tree on side branch on a large flat fork.

On May 4th, in light oak and poplar bush on side of Boyne river three and one-half miles east of Carman, returning from a collecting trip I found a Red-tail's nest in a large oak. This was on side branch, hard to reach, but I got to it after some hard work and took therefrom three handsome eggs The nest was quite new, large, of sticks and twigs, lined with bark, leaves and grass, and was placed about 30 feet up. On the same date I got another set of three Red-tail's eggs. The nest was in a small poplar tree in a poplar bluff only 18 feet high. The nest was the largest I have ever seen. It measured 3 feet in height and 2½ across, was a mass of large and small sticks and twigs of poplar and willow and was built on top of an old Crow's nest. The depression was 9 in. in diameter and quite shallow and scarsely lined with bark, leaves and stubble. I could see this nest from either north or south at a distance of over two miles.

On May 6th I took another set of three. Nest in a tall oak 30 ft. up in main fork, medium size, built of sticks and twigs and lined with bark and grass. This nest was new and although there were old nests in the immediate vicinity of this new one the birds seemed to prefer to construct their own.

Next date, May 7th, west of Carman I got another set of three. This nest was in an cak, one of a clump of three in poplar woods. Nest was about 30 feet up in a fork on trunk and was new, was built like others of sticks and twigs and lined with grass and bark shreds. The eggs were nicely marked.

On May 12th a set of two eggs was taken from a poplar 25 ft. up in heavy poplar woods northwest of Carman. This nest was situated 25 ft. up, close to trunk, made of poplar and willow sticks and lined with grass and bark, was of medium size and new In this case there were several old nests handy but the birds seemed to prefer to make a new structure.

I see I have missed one nest, date May 9th. This Red-tail's nest was in a tall oak tree 40 ft. up, the tree being in and oak grove and situated on bank of ravine which seems to be a favorite location, placed in a fork near top of tree on trunk, was a large coarse structure of sticks and twigs, lined with bark, leaves and grass and contained three eggs, This also was a new nest.

A second set of two eggs taken on May 12th was taken trom a large and conspicuous nest in a poplar tree 20 ft. from ground, the nest composed of sticks and twigs, was lined with poplar bark and a little dried grass and was of this season's construction like one previously mentioned. There were a

number of old nests in the immediate vicinity of this nest which the birds might have used.

A third set of Krider's, two eggs, taken May 12th was taken in the same locality, locally known as "the poplars;" a large tract of wooded country, covered with willow scrub and poplar trees. This nest was in a poplar tree 25 ft. up in main fork, nest of medium size, of sticks, lined with leaves and grass with few strips of poplar bark and was a nest of the year, evidently built by the birds themselves. Old nests abound all through this district, but I found none of them occupied.

On the 14th of May I again visited this district and took a set of two Red-tail's eggs. This nest was placed in a tall dead popiar about half burned through at the bottom and I was afraid to climb it at first. However I made up my mind to try it when the female left the nest at my near approach, as I knew there was something to get, and succeeded in reaching the nest and returned to terra firma without mishap. The wind was strong and cold and from the north and a cold rain made this a very unpleasant task. This was the second largest nest of the season and was built on the top of an old one. The nest projected so far out around the fork in which it was placed that I had trouble in reaching over it and was 30 ft. high. The nest was composed of large and small poplar sticks, many of them being charred by the fire that had passed through in the fall. The nest was lined with poplar bark, grass and a few green leaves. The nest was quite close to the railway track.

On this day I took another set of two while going home, from dead poplar, 28 ft. up This nest was also large but not as large as the other, of sticks of poplar, lined with bark shreds and leaves. A few feathers also were used but I think these are accidental. This also was a nest of the season.

May 16th visited Jickling's marsh which lies in the poplar belt. I took from a large nest in a poplar tree 35 ft. up in main fork, a set of two eggs. These were small, the smallest measuring 2.20x1.65 and were well marked. This nest was new, although situated quite close to nests built the previous year, was like the rest, of sticks, mostly poplar, and lined with bark shreds and roots, grass and leaves.

On May 17th a set of two eggs rewarded my search. These were Red-tails, the nest in a poplar tree 25 ft. up, of sticks and twigs, lined with grass and fine roots. was of large size and new. A second nest found the same day contained a set of three eggs, was in a tall and spreading Balm of Gilead tree, 25 ft. up, in main fork, was large and new, composed as were all the others found in this bush, of poplar sticks, lined with bark, grass and leaves. As I watched the old Red-tails circling above I glanced around the neighboring treetops and counted five more nests within my view. I took my set to the buggy and visited each of the five nests in turn. They all proved to be old nests in different stages of dilapidation, from which I should judge that this pair of birds had bred here for a few years and had used all the nests in turn.

Another set of three eggs taken the same date from a nest in a poplar tree 20 ft. up, was also a new nest and built of sticks and twigs, lined with roots, stubble and leaves.

On May 19th I took two sets of Red-tail of three eggs each, both from poplar trees. These nests were both new and were within a short distance of old nests evidently used in previous years.

Just two more nests I will mention and then I will end my paper.

(To be continued.)

CHRIS. P. FORGE,
Carman, Manitoba.

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THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 3. ALBION, N. Y., MARCH, 1901. WHOLE No. 174

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Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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IMPORTANT.

This, March, Oölogist was not issued until April 1st. The April issue will be printed on April 15th. Copy intended for that issue must be forwarded by *return mail*

Index

to Vol. XVII (1900) of the Oölogist will be printed in the April issue.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No.174 your subscription expires with this issue
175 " " " " Apr., 1901
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184 " " " " Dec., "

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FOR SALE:—A fine one year old Bird Dog. has been trained for Quails and Grouse and a beauty too. Will sell for $5 00 cash. Freight or express must be paid by purchaser. Address HANS ANDERSON, Box 13, Cushing, Howard Co., Neb.

TO EXCHANGE:—Fine eggs in sets with data for cash. Complete file of "The Osprey" for $5.50. Will give cash or exchange for certain fossils. HARTLEY H. T. JACKSON, Box 87, Milton, Wis.

SOME OF THOSE rare sets of Pigmy Owls, Pacific Horned Owls, Belding's Jay. Pasadena Thrasher and Cassin's Kingbird to exchange for Coues' Key, Ridgway's Manual or other ornithological books. Will also sell a limited number for cash or trade for sets of Raptores. HARRY H. DUNN, Fullerton, Calif.

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SPRING SNAPS!—One fine White Pelican skin $4.00; choice fresh Snowy Owl skins $2.50, $3.50: fresh Great Horned Owl skins, $1.75 each; fine Wolf skins for rugs with heads, skulls, legs and claws complete, $2.50 each. Mounted birds! Sharp-tailed Grouse, $2.50; Ruffed Grouse, $2.00; Prairie Hens, $2.25; Pine Grosbeaks, 60c.; pair N. Hairy Woodpeckers, $1.50, on stump; Spruce Grouse, $2.25; A. Bittern, $1.50; almost white Snowy Owl, $10.00; a quantity of Elk teeth, $6.00 per dozen. All A1 specimens prepared at prices quoted. Scalps and heads of Moose and Elk for sale. Buffalo horns polished at 50c. to $1 00 a pair, matched pairs. Order from CHRIS. P. FORGE, Taxidermist and Collector, Carman, Manitoba.

SPECIAL CLIPPER BIKE rode about 2 months, perfect shape, Palmer tires, gear 78, frame 24 $15 cash and $15 in eggs takes it. BENJAMIN HOAG, Stephentown, New York.

EGG TRAYS FOR SALE or exchange for sets with data. Trays in six sizes, any desired color. Prices on application, discount on large orders. Samples 10 cents. M. S. CONWAY, 584 6th Ave , Lansingburg, N. Y.

FOR SALE:—Fancy and common Geodes, ranging in price from 25c. to $5.00; halfs from 10c to 50c. Special rates to colleges and museums. H. K. McLELLAN, Hamilton, Hancock Co., Illinois. 179

PRBLICATIONS WANTED:—Cash or exchange given for *Bull. Cooper Club* Vol. I complete or in part; any volume of *O. and O.*; OOLOGIST Vols. VI to X inclusive; *American Exchange and Mart* any volume complete; *Avifauna* any number. R. C. McGREGOR, Box 158, Palo Alto, California.

BRISTOL STEEL ROD, No. 16 Rangly Fly Rod. 4 joints and butt, new, $3.75 cash and $3.75 in eggs. Let me quote you cash or exchange on anything in line of sporting goods. BENJAMIN HOAG, Stephentown, New York.

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PHEASANT EGGS FOR HATCHING.—On and after May first I will be ready to supply settings of Mongolian Ring Neck Pheasants. Settings of 15, price $4. Orders booked now. A. W. PERRIOR, 1409 So. Salina St., Syracuse, N. Y. 174

WANTED FOR CASH.—First-class sets of game birds, (particularly large sets) Ducks, Geese, Grouse, Partridges, etc. Send list and lowest cash prices: also quote fine sets of any North American birds. J. L. CHILDS, Floral Park, N. Y. 174

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Audubon's Caracara 2-1	30
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Blue-fronted Jay 2-1	35

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Stephentown, New York.

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THE OÖLOGIST.

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Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

Gleanings from My Note Book.

In looking over my note book I find many short notes, or as it were, many glimpses of bird life, which, singly, could not very well be expanded into an article, so I have decided to write them up collectively, and offer them under the above gleanings.

As the weather has a decided influence on bird movements, especially migration, I have usually prefaced my notes with a sort of weather report which I may use in connection with these gleanings Its severity determines to a great extent the character and abundance of the winter visitors that we may expect from the northland, while its mildness leads us to look for solitary individuals of our summer residents which usually leave us for the sunny southland, hundreds of miles away.

January 1, 1900—N. W. wind with zero weather. As I glanced out of my den window I saw for the first time this winter a flock of about 100 Snowflakes on the snow covered ice along the lake shore. A Herring Gull was flying around the sandbar, and some Ducks were feeding along head of lake. A "*Lanius borealis*" flew about from one tree top to another and teetered up and down on the slender branches. Tree Sparrows are numerous as usual and make a tour of the town every day, eating the weedseeds in gardens.

February—Heard the first gurglings of Song Sparrows on the 13th, during an hour of sunshine in the morning. Next morning they climbed up in a brush pile to rehearse, but seemingly became disgusted for they soon dove into the cattails out of sight, and were not heard again until the 22d when I heard one bubbling over a little.

March 1.—This month came in a

"whooping." Last night the ground was nearly bare, but this morning 24 inches of snow covered the ground. A lot of Horned Larks came into my garden to feed, but hardly a weed top was to be seen.

March 2 —Just 26 inches of snow on the level, and great drifts have been formed by the heavy winds. Several groups of Crows flew around our town, anxiously scanning the snowy billows for a morsel of food. I scattered wheat on the snow for the Horned Larks and three of them remained all the afternoon. At first only one came, and when others came he tried to drive them away—seemingly afraid that there wouldn't be enough grain for all.

March 6.—Snow increased to 32 inches deep and the Horned Larks have become abundant—increase in numbers every day, and are so tamed by hunger that they run about picking up the buckwheat meats within 5 or 6 feet of me.

March 13.—Robins arrived on the 9th—4 of them—although the temperature was 6 degrees below zero. I saw about 50 today in an orchard where they were "yipping" and eating rotton apples that still hung on the trees.

March 23.—Saw the first Red-winged Blackbird this morning at 7 o'clock. He sat on the "tipmost branch of the topmost" elm tree and poured forth his happy "*O glee-ee-ee e.*" But he soon flew on north and was lost to view. The 40 or 50 other companions who ought to have been with him are probably stuck upon the barbarous bonnets of our highly organized and civilized "fearfully and wonderfully made' maids, who seem to be trying to equal their sisters in darker portions of the earth, in the manner of personal adornment.

I heard the sweet warblings of Bluebirds for the first time. This morning quite a sprinkling of Robins came into town and for some time their homely yet pleasant notes sounded the good tidings of nearby balmy days "when the Robins will nest again." Saw two Meadowlarks flying north high in the air.

March 25 —This was a beautiful day, clear but an icy east wind made it rather frosty. Robins filled our streets with music, while the valley fairly swarmed with Bluebirds and I never have seen—even years ago—such a flock of Bluebirds. All day long they warbled, flitted and played around the old willow stubs that fringe along the swamp. During the morning hours Song Sparrows were in full song for the first time.

March 26 —At 5:30 p. m. about 75 Red-wings came from the fields and flew out in the swamp where they roosted in the cat-tails.

March 27.—Although the weather was cold and cloudy at 6:15 a m., yet the Song Sparrows were bubbling over, as on a bright sunshiny morn. Kildeers were seen on the 23d, but I saw my first one today over in a grassy boggy place.

March 30.—As I stood in my garden this morning about 7 o'clock, I heard among the medley of Robins, a sweet warble, and closer listening revealed a Purple Finch's jubilant strain, coming from a lowly perch in a tree in my garden, but as I approached he mounted higher until the top of the tree was reached, when after a few bursts of melody, he arose high in the air flying first one way and another, then flying up the street. For the first time the Red-wings remained around swamp and sang their "*O-glee-ee*" and willow trees and cat-tails, while the irrepressible Song Sparrows mounted on dozens of high places sang with joy and sweetness—a song that is indeed of great variation.

Robins are becoming enamoured of each other and scenes of courtship are an every day occurrence—males uttering subdued twitterings and "showing off"—flitting about the females from

branch to branch and I think many are already mated. The multitude of Bluebirds that were here on tue 25th have passed on north and spread out to the hillsides. Considerable snow in woods and protected places. Lake is frozen over with about 12 inches of ice.

March 31.—While strolling along the street before breakfast I ran onto a little troop of Chickedees. As I watched them as they hung back down, or, in other words, "bottom side up," one little fellow caught sight of a branch of the maple that was leaking sap, and with every indication of having found a "fountain of youth" the Chickadee flew to where the sap was dripping and drank and drank with an eagerness equal to an old toper taking his morning "eye opener," then he "chick-a dee-deed" and from across the street came two more of these black-capped topers who drank the sweet juice, and uttered those low notes that sound so far away.

April 1.—Beautiful clear day, but icy N. wind. I spent the day around on the lowlands, enjoying the hosts of Song Sparrows, Robins, Red-wings, Purple Finches and a few Meadowlarks. I heard a Phœbe for first time, and I wonder what such a bird can live on *now* when it is so cold, with ice and snow and no flying insects. Although I've seen a Bronzed Grackle several times, today is the first time that I've heard him tuuing up the wires of his "Æolean harp." Robins are mated and looking for suitable nesting places.

April 2.—Blackbirds are here in abundance, especially at night, when large flocks of Red-wings, Cowbirds and Grackles come in from the fields, alighting in tree top around swamp and pour forth their songs and notes in rich profusion.

April 3.—For several days a small flock of Ducks has been feeding in the creek and today I noted a pair of Wood Ducks and several Mallards.

April 5.—The graceful Tree Swallows came yesterday—about a dozen of them—and this morning they were skimming over the thin paper ice along the edge of swamp and lake.

April 8.—It has been bright and clear all day with a cold north wind, which drove the ice out of this end of the lake. A new flock of Grackles arrived from the south at 7 a. m. Those that have been here are building nests in almost every evergreen tree in town. I have never seen the town so full of them, indeed, the mischievous great glossy fellows seem to really enjoy town life more than any other bird I know.

A small band of Slate-colored Juncos are staying in the evergreen trees that adorn some yards. During a short walk in the woods I saw several Crows carrying nesting material. On my way home noted first Mourning Doves. Bird life here in the valley is abundant, but the woods are silent as the tomb—except for cawing Crows and the lonesome notes of the White-breasted Nuthatches. About 75 Ducks passed on north this p. m.

April 12.—This evening I took a walk along swamp, listening to the full chorus of peepers. They were heard first on the 6th. As I stood on the bridge I heard Snipe making a sort of short, mewing noise,, as they flew by me just overhead, and I also heard the whistle of many wings as a flock of "Whistle-wings" went on north in the gathering gloom.

This p. m. a few Tree Sparrows came into the willows along the swamp road and one seemed to be in nearly full song, at least he burst forth in as sweet a strain as ever I heard from a Sparrow's throat. A pair of Loons arrived last night, also a great flock of American Herring Gulls, but they passed on north at sunrise. A Great Blue Heron sailed in from the north and spent the day fishing around the swamp. Yesterday a big Osprey

spent the day here, as did a Marsh Hawk.

April 15 —I made my first trip after sets of *Buteo borealis* today. My route was north, through the valley. except when I turned to climb the hillsides to where the nests were. Weather warm and clear until 5 p. m. Scarcely had I left the town when I heard the trilling of hundreds of Vesper Sparrows but found them scarce half a mile back on the hills. An occasional weak voiced old Field Sparrow trilled from some weed top—weak voiced but none the less welcome. From the distant woods came the drumming of a Ruffed Grouse. As I approached my first Hawk woods I saw the male sitting on a dead limb in a tall pine and near by the female sat on her nest which contained 2 plain eggs so I left them. The nest was 65 feet up an almost limbless tree and was lined with a bed of pine sprigs, corn husks, bark chips and few feathers.

In another woods about 3 miles farther north I found the second nest with the telltale sprigs of evergreen branches waving over edge ef nest in a basswood about 50 feet up, but it was never used. While sitting on the sunny side of a big tree eating lunch I heard for the first time the melodious "chink" of a Louisiana Water Thrush. From here I tramped over a mile to see an old nest of *Buteo lineatus*—in a woods where I have taken 6 sets in years gone by. This pair had always laid a beautiful set for me by April 12, but at this time only one egg had been laid. The nest was an old one, which had not been fixed up at all—she had merely dug a hole in a mass of dead leaves that filled the nest, so that the egg was half buried but when I visited the nest on April 22d I found that she had added a few pine branches, corn stalks, bark strips and chunks of moss, on which lay 3 handsome eggs. The female left the nest as I approached and did not utter a single cry, which is characteristic of this bird. I called on two other pairs of Red-tails but they had not begun to nest yet. After supper I spent an hour around swamp. About dark a hundred "Whistle wings" went on north in small flocks of from 6 to 50.

C. F. Stone.
Branchport, N. Y.

(*To be continued.*)

Timely and to the Point.

[Dr. N. expresses our sentiments to a T in the above valuable suggestions—with the exception of his "3d"—we boycott the wadding and thread"—prefer a good grade of fluffy cotton and *no thread*—tissue if anything for the outer wrapper. We have lost many a valuable small egg by perhaps too hasty or careless unwinding of the "thread."—Ed.]

Mr. Editor:—If you will kindly allow me a small section of your valuable paper I will endeavor to touch upon a subject that has been sorely neglected on the part of contribufors to oölogical publications. Nothing is more aggravating than to purchase or exchange for fine specimens of eggs and upon teceiving them to find a part of one or more sets broken, thereby rendering the set worthless. This catastrophe some will say is the careless handling of packages on the part of postal clerks, etc. Very true, but to them we cannot look for redress.

The fault lies in every instance with the shipper, with only one exception, and that is where packages containing eggs are sent over the Canadian border. In this case I have found that the over zealous custom officers in searching for dutiable gems, etc., put their fingers through many a rare and costly egg. This has been my experience with a choice set of *Accipiter velox,* as they were carefully packed and in a reinforced box. The cover had literally been pried off, contents of box fatally sounded and sent along. In this case I

do not see that the shipper was at fault and so one must bear with it.

But here in our own service, where the box is never opened from the time it leaves the shipper until it is received by the consignee, a broken egg should rarely, if ever, be found. Collectors, as a rule, are either too anxious to save a few cents' postage or will not spare the time to tack a few reinforcements into their cigar box before packing the eggs. This is the greatest fault.

Secondly comes the careless manner in which the specimens are rolled in cotton. As a matter of fact I have received eggs from collectors packed in cotton that had been used in the field and over and over again until it was but little better than excelsior.

Other collectors have the habit of putting in a layer of cotton, then a layer of eggs, and so on until the box is filled. To such collectors my sentiments are perhaps best unsaid. No doubt others have received eggs from these same collectors in this condition.

I may have spoken harshly in this article, but those to whom it applies I trust will digest every word as meant for them. And now a few instructions on packing eggs.

1st. Ship by express instead of mail whenever possible.

2d. Reinforce all cigar boxes by tacking small cleats on the inside to prevent cover from crushing in.

3d Wrap each egg carefully in a strip of thin white wadding, which has been previously separated down the center, allowing the soft side to come in contact with the egg. Wrap each egg around the smaller diameter first, then around the greater, and lastly use a few turns of thread to keep the cotton in place.

4th. Put a thick layer of cotton into bottom and top of box.

5th Pack each egg in very carefully and use great caution in closing lid of box. (Many are broken this way.)

6th. Use heavy wrapping paper and stout twine, address plainly and don't forget, if your conscience will allow of it, the *glass notice*, where our careful manipulator, the postal clerk, will see it.

7th. Be ready to make all losses good.

Yours for more care,

J. B. Newton.

Unionville, Conn., Jan. 15, 1901.

Field Notes from Manitoba.

On May 4th I found two nests of Krider's Hawk, one in a partly dead elm 20 ft. from ground. To this nest I climbed and found it contained nothing but appeared to be ready for eggs. The other was also in an elm about the same height and was not quite ready for eggs. On May 9th I tried these nests again, but found them empty. On both occasions the old birds circled above the trees and scolded me for my intrusion so I decided to call again So on the 22d I called on my way home from the swamp, still no eggs A little further down in the woods I saw a very small nest in an oak, not more than 15 ft. up and climbed to it. It contained two eggs of Red-tail, both were incubated. This then was the second nest built by this pair, the first nest having been deserted because I had climbed to it on the 4th of May. The nest was very small, no larger than my two hands and quite loosely put together.

On May 31st while looking for Marsh Hawk's nests I called for the third time at the Krider's nest located May 4th, and as it was still empty I knew there must be another somewhere. A search revealed a nest in top of a tall oak, but the bird was absent so I did not climb but toward evening I called round again and at my approach the bird left the nest. I quickly made the ascent

and took a small set of two well marked eggs, slightly incubated. The nest was small and loose and I could see through the bottom but not clearly enough to discern the eggs. This is a phase of character I have not before noticed in the Hawks, but in these two cases with Red-tails and in four cases with Swainson's Hawk this season, I found the birds deserted the nests I had climbed that contained no eggs. In the one case with the Swainson's Hawk I found a nest complete but did not climb. A few days after I called round for this set and on climbing found one egg. As the nest was where it could be seen for over a mile in the top of a dead willow I took this egg, but returning next week found the nest deserted. I then drove over the school section and examined all the bluffs and in a small willow bush found Mrs. Swainson trying to incubate two more eggs, which I knew by their resemblance to be the other eggs of the set, I having already taken the first. On this occasion she had seized upon a partly built Crow's nest, flattened it out and deposited the two eggs in it.

On the 18th of June I took my last set of Krider's for the season. This was a second set and strongly resembled the first one. The nest was small in a tall oak beside a ravine about one mile distant from where I took the first set and contained two eggs nicely marked. This nest was newly built like most of the others by the birds and was unusually deep, the cup being nearly 6 inches in depth and 7 in diameter. Both male and female birds were quite bold and seemed to resent my robbing their second nest. Whether they built a third I don't know, but if they did I did not find it as my horse hurt his feet shortly after while away after Loon's eggs, and I had to leave the field for the season.

CHRIS. P. FORGE,
Carman, Manitoba.

Some Winter Birds of a Country Farm-yard.

Ruffed Grouse, *Bonasa umbellus*. A few of these beautiful game birds are seen during the winter budding in apple trees near our yard.

Downy Woodpecker, *Dryobates pubescens*. Quite plenty in shade trees in our yard on pleasant days during the entire winter.

Blue Jay, *Cyanocitta cristata*. Very abundant. A quite large flock makes daily visits to our yard in search of food.

Pine Grosbeak, *Pinicola enucleator*. Quite abundant but more so as spring approaches. They come in flocks to the maples in our yard and feed on the buds.

American Goldfinch, *Spinus tristis*. Flocks of this species alight in the trees in our yard quite often during the winter. In their winter plumage they are very plain looking birds.

English Sparrow, *Passer domesticus*. An occasional straggler finds his way to our yard. I caught one in my hands that flew into our shed to get out of the storm.

Snowflake, *Plectrophenax nivalis*. Very large flocks can be seen from our yard skimming over the fields and pasture and a few come to our yard occasionly.

Song Sparrow, *Melospiza fasciata*. As spring approaches we are filled with gladness by the sweet song of this sparrow returning to his summer home, although a few remain here nearly the whole year.

Northern Shrike, *Lanius borealis*. One of these butchers is an occasional visitant to trees in our yard during the winter.

Brown Creeper, *Certhia familiaris americana*. These interesting little birds are winter visitants to our farm yard shade trees, searching for food under the rough bark of the maples and butternuts.

White-breasted Nuthatch, *Sitta carolinensis.* Another interesting little farm-yard visitant, flying in open doors and windows and making themselves much at home and all of the time uttering their curious quauk.

Red-breasted Nuthatch, *Sitta canadeusis* The above description of the White-breasted species well describes this species, although the Red-breasted is not so abundant.

Chickadee, *Parus atricapillius.* Last but not least on my list comes the little Titmouse, the bird of so friendly disposition and gentle manners, who thinks no one his enemy. They are very abundant here and help to make the long winter pass more swiftly by their happy, joyful nature. In closing this paper I cannot refrain from writing what Wilson says of this species which I take from Davies "Nests and Eggs," fourth edition. It is as follows:

They traverse the wood in regular procession from tree to tree, tumbling, chattering and hanging from the extremities of the branches, examining about the roots, the leaves, buds and crevices of the bark for insects and their larva. They also frequently visit the orchards, particularly in the fall, the sides of the barn and the barn-yard in the same pursuit, trees in such situations being generally much infested with insects. Therefore we rank this little bird among the farmer's friends, and trust our citizens will always recognize him and as such."

I consider the above description of this little bird the best I have ever read and would call particular attention to the last few lines, and trust that all our citizens throughout this broad land will give more attention to the study and protection of our feathered friends; stop the wholesale destruction of our native birds before it is too late; unite in this great work, for unity means strength.

GUY L. BRIGGS,
Livermore, Maine.

A Red-headed Black-bird.

I saw a Red-winged Blackbird last spring with a red head as well as shoulders.

I was painting a fence near a swamp and the bird was in sight at any time I had a mind to look for him. My team came to take me home and I called my wife's attention to the bird.

We are both familiar with this species and have it mounted at home.

The bird was evidently mated because it was June and all of his actions pointed to his being interested in a family in the bushes, near by.

R. S. TORREY,
Wenham Depot, Mass.

More Albinos.

In the December issue of the OOLOGIST I saw an article written by G. G. Welsh giving an account of an Albino English Sparrow. A day or two after I read this article a friend told me he had seen a Sparrow which was nearly all white in a large flock of the same species. I told him to try and get it for me, so the next day he brought it, having shot it that morning. I found it to be a female English Sparrow with both wings pure white and a few white feathers on its head and neck. The rest of the feathers were of the same color as other English Sparrows. I now have it in in my collection mounted with its wings half spread.

I have three other Albinos in my collections which were killed here. On April 23, 1899, a friend of mine was watching near a pond for some Ducks when he saw a white bird flying alone, coming toward the pond. He shot at it and killed it, and as he had never seen a bird like it he brought it to me. I found it to be a pure white "Yellowlegs;" this is the only pure white albino "Wader" I have heard of. (if there are others I would like to hear of them.)

The same person on March 16, 1899 brought me a male Robin which has three white feathers in its right wing and four in its left wing, four white feathers in its tail, breast white, its head, neck and back mottled with white, several coverts white.

The other Albino which I have is a female Bob-white. It was killed on November 28, 1899. This bird is of a very light color all over, but not pure white, its bill white, feet and legs a pale flesh color.

If these notes are of sufficient interest you may publish them.

O. S. Biggs,
San Jose, Ill.

Review.

CANADIAN BIRDS BY JOHN MACOUN, M. A., F. R. S. C , NATURALIST TO THE GEOLOGICAL SURVEY OF CANADA.

In compiling this catalogue of the birds of Canada the author has endeavored to bring together facts on the range and nesting habits of all birds known to reside in, migrate to or visit the northern part of the continent.

In addition to the Dominion of Canada he has therefore included Newfoundland, Greenland and Alaska.

Since the publication of Fauna Boreali Americana by Swainson & Richardson in 1831 no attempt has been made to produce a work dealing with the ornithology of the region now embraced in the Dominion of Canada.

In 1857 Mr. Montagu Chamberlain published a catalogue of Canadan birds and previous to this Mr. T. McIlwraith published his Birds of Ontario, which included the birds known to occur in that province only.

The Birds of Manitoba by Mr. Ernest Seton Thompson was published in 1891, and, as the name implies covered little more than that province.

In 1891 Bird Nesting in Northwest Canada by Walter Raine was published, which gave an account of the birds found nesting in Assiniboia, a vast territory that had previously been overlooked by ornithologists.

Mr. C. E. Dionne of Quebec published a catalogue of the birds of that province and Mr. Ernest D. Winkle has published a valuable little work entitled The Birds of Manitoba, while in 1898 Mr. John Fannin's Birds of British Columbia appeared.

While the above ornithologists were engaged gathering and publishing the valuable information contained in these works, Professor Macoun had constantly before him the necessity of the present work and has been collecting notes and observations during all his journeys since 1879. Consequently he has gathered together a mass of valuable and interesting matter and his work on Canadian Birds is the most complete and up-to-date work yet published.

Part I includes Water Birds, Gallinaceous Birds and Pigeons and Part II will be printed this spring.

Least Bittern Observed in Pennsylvania.

Having noticed in the April (1900) Oölogist the article by Mr. E. R Forrest, Washington, Pa , in regard to Least Bittern being observed in Pennsylvania, it may not be out of place for me to state that I have observed them here in the months of April. June, July, August and September. It appears strange that I never observed any in May. For two years I have observ- a pair at Holmesburg, this county along the Pennypack creek, where they nested, although I never found their nest. In August 1899 at this locality I flushed four from along the creek; two I identified as young Brids from their weak, uneven flight In September several years since, a boy offered me one for half a dollar, which he shot at Brideburg, this county. It was a young one and not quite full fledged.

Richard F. Miller,
Philadelphia, Pa.

$5.00 for only 50 cents.

For 1901 Subscribers of THE OOLOGIST only.

While "taking inventory" we found many items in very large quantities—enough to last the ordinary Curio Dealer a life-time and in such quantities that we cannot job them off to dealers except at a sacrifice—and rather than give dealers the benefit of the same we prefer and have concluded to give this benefit to the 1901 subscribers of the OOLOGIST. Those who have paid their subscription to the OOLOGIST for 1901 or who remit for same when accepting this "$5.00 for 50cts" offer —we will send by express at their expense (we can send prepaid for 25cts.) all of the specimens and books listed below for ONLY 50cts.

1. Chinese Horn Nut, China ..... $ 05
2. Egg of Skate or Sand Shark, Martha's Vineyard 05
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4. Black-Mouth Tree Snail, Pavillion Key, Fla 25
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10. Four Gem Stones (Red Agate, Black Onyx, Crocidolite and Sardonyx Intaglio) cut and polished 40
11. Compass or Sunflower Starfish, Chili 35
12. Fossil Scaphites (Nautilus Family) Montana 25
13. Goldmouth Shell, Philippines 25
14. Fossil Shark Tooth, Virginia 10
15. Two Tarpon Scales, Florida 05
16. Fossil Polyp Coral, New York 15
17. "Electric Stone," a var of Tremolite emitting flashes of light when scratched with any hard substance, New York 10
18. Precious Coral, polished twigs, Mediterranean Sea 15
19. Banded Murex Shell, Med. Sea 15
20. Money Cowry Shell. Hawaii 10
21. Cone-in-Cone, Chautauqua Co., N. Y 1
22. An Exchange Notice Coupon 2
23. Lattin's "Catalogue of N. A. Birds Eggs" 10
24. Short's "Birds of Western New York." 15
25. Tassin's "Directions for Collecting Minerals" 05
26. A copy of "Penikese" 35
27. Five assorted Bird, Animal and Flower Pictures, my selection, size 6x8 in., beautifully colored, true to nature 30

$5 00

No changes or alterations of any kind can be made in this offer—you either accept or not as you may elect. The offer is no fake nor catch penny scheme but is made as stated and in good faith in order that *many* may share in the benefit which would otherwise fall to a few, and incidentally to increase the OOLOGIST'S subscription list. This premium offer cannot be duplicated for double what it costs the 1901 subscribers to the OOLOGIST by any dealer in America—the publisher of the OOLOGIST included—after present supply is exhausted.

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Remit in most convenient manner. Address plainly and in full.

FRANK H. LATTIN, ALBION, N. Y.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 4. ALBION, N. Y., APRIL, 1901. WHOLE No. 175

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No. 175 your subscription expires with this issue
180 " " " " Sept., "
184 " " " " Dec., "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This April OOLOGIST was issued April 15th. The May issue will be printed on May 1st. Copy intended for that issue must be forwarded by return mail.

WANTED.-Collectors throughout the United States and Canada to collect for me scientifically birds' eggs in sets, with full data, at ½ Lattin's catalogue rates. DR. M. T. CLECKLEY, 457 Greene St., Augusta, Ga. 175

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

"The one exchange notice I had in THE OOLOGIST last year was so successful that it kept me busy all the year with exchanges." J. GORDON, Wigtownshire, Scotland.

"I take numbers of ornithological and oological journals, but whenever I wish to buy or sell anything I turn to the want columns of the OOLOOIST." HARRY H. DUNN, Fullerton, Calif.

PHEASANT EGGS FOR HATCHING.—On and after May first I will be ready to supply settings of Mongolian Ring Neck Pheasants. Settings of 15, price $4. Orders booked now. A. W. PERRIOR, 1409 So. Salina St., Syracuse, N. Y. 174

OOLOGISTS WANTED:—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

TO EXCHANGE.—For sets, almost complete volumes of Osprey, Nidologist, Museum. Also foreign stamps. Write what you want to complete files. HAROLD M. HOLLAND, Gen. Delivery, San Diego, Calif.

AUKS '94, '95 and '96 and 3 sets, 4 eggs of Marsh Hawk to exchange for cash or snap-shot camera and outfit. No cheap trash wanted. S. J. ADAMS, Cornish, Maine.

FOR SALE OR EXCHANGE.—Minerals and curiosities, old books and newspapers, coin sale catalogues, natural science papers and magazines. GEO. WALTHER, Rushville, Yates Co , N. Y.

WANTED.—A few fresh skins of Prothonotary and Cerulean Warblers. Will take some other varieties freshly skinned. I offer eggs in sets for same. J. R. MANN, Arlington Heights, Mass.

A FEW first class Texas birds' eggs to exchange for birds' eggs or curios of other states. Address ROY WOODWARD Pearsall, Tex.

EASTMAN folding pocket kodak, 3½ x 3½, mandolin, Elgin gold ladies' watch and magazines to exchange for fire arms of any sort, Indian relics, curios, bird, mammal or snake skins, or anything suitable for decorative purposes. STEPHEN VAN RENSSELAER, JR., West Orange, N. J.

MAGAZINES for exchange: 1 Vol. Antiquarian, 1 Vol. Archaeologist, 3 Vols. Museum, 1 Vol. Oregon Naturalist, 2 Vols. Oologist, 1 Vol. N. F. & F. R., and a hundred other natural history papers at your own price for coins, shells or Indian relics. Write at once. WM. CUDNEY, Galt, Ont , Canada.

FOR EXCHANGE.—One Bristol steel rod, $5; eggs in sets; one Davie's key. 5th edition, new, $2 25; complete file Natural Science News, $2; twelve back Nos. Osprey, including seven Nos. of Vol. one, $2; Vol. three Museum, $1; twenty Nos. of Oologist, back of 1896, $1; B-flat cornet, $8; three-inch T-perches painted white or natural finish, 10c each. Will give 50c per 100 in exchange for any of the following tobacco tags: Star, Good Luck, Horse Shoe, Master Workman. Standard Navy, Old Honesty, Drummond Natural Leaf, Sickle Planet, Cross Bow, Brandy Wine, Nobby Spun Roll, Spear Head, Neptune, J. T. Will also give 40c per 100 in cash. E. L. HALEY, Rangeley, Me. 176

WANTED:—A1 sets Nos. 83, 172, 192, 193, 206, 210, 228, 258a, 261, 286, 301, 302, 310, 478, 486, 618, 701. Can offer good sets, Belgian Hares, Abyssinian and English Cavies, Fancy Pigeons and Pit Games. ALMON E. KIBBE, Mayville, N. Y. 175

WANTED:—Sets of 58, 64, 76, 137, 139, 261, 273, 337, 339, 373, 387, 388, 390, 393, 394, 501-611, 614 and others, especially 218, 230, 334, 364. Exchange or cash. All answered. A. E. PRICE, Grant Park, Ills. 177

"I think the OOLOGIST is the finest advertising medium in existence." ROY H. BULLIS, Winnebago City, Minn.

"My ads. in the OOLOGIST always pay me beyond my expectations." A. E. PRICE, Grant Park, Ills.

"Since my ad. appeared in February number of OOLOGIST I have received letters from all over the country and I could sell or exchange 100 ssts if I had them." JOHN D. CURRIE, Minn.

FOR SALE:—Fancy and common Geodes, ranging in price from 25c. to $5.00; halfs from 10c to 50c. Special rates to colleges and museums. H. K. MCLELLAN, Hamilton, Hancock Co., Illinois. 179

WANTED.—Indian relics and Buffalo robes. Will pay cash or make good exchange Nothing but genuine goods wanted. CHARLES BARNUM, Utica, N. Y.

WANTED.—Bird and mammal skins, eggs, Indian relics, minerals, shells, coins, stamps, insects. Correspondence solicited. EUGENE WOOD, Fishkill, N. Y.

SPECIAL NOTICE.—Will collect sets or series of 6, 77 219, 221, 261, 337, 467, 497 and 614. Look over my ads. in March OOLOGIST. Write me at once. ROY H. BULLIS, Winnebago City, Minn.

FREE.—Wishing to get statistics regarding my Collectors' Tool from different localities, I make the following offer: 1st prize, set 428 n-2, for the most noteworthy instance of collecting with the tool; 2d prize, set 729 1-3, for securing eggs furthest out on limb; 3d prize, a year's subscription to OOLOGIST, for securing eggs highest above collector. Other special instances rewarded. Artificially placed eggs not allowed. Prizes awarded and result announced in August. J. R. NOWELL, Anderson, S. C.

SPRING SNAPS!—One fine White Pelican skin, $4.00; choice fresh Snowy Owl skins, $2.50, $3 50; fresh Great Horned Owl skins, $1.75 each; fine Wolf skins for rugs, with heads, skulls, legs and claws complete, $2.50 each. Mounted birds! Sharp-tailed Grouse, $2 50; Ruffed Grouse, $2.00; Prairie Hens, $2.25; Pine Grosbeaks, 60c; pair N. Hairy Woodpeckers, $1.50, on stump; Spruce Grouse, $2.25; A. Bittern, $1.50; almost white Snowy Owl, $10 00; a quantity of Elk teeth, $6.00 per dozen. All A-1 specimens, prepaid, at prices quoted. Scalps and heads of Moose and Elk for sale. Buffalo horns polished at 50c to $1.00 a pair, matched pairs. Order from CHRIS. P. FORGE, Taxidermist and Collector, Carman, Manitoba.

COLLECTION of eggs for sale cheap; 1st-class eggs: 387 1-6, 511b 1 3, 506 1-2, 498 1 3, 593 1-4, 477 1-4, 622 1-4, 736 1 4, 705 1-4; singles: 80, 71, 65, 30, 128, 223; Redstart, end-blown eggs: 121 1-3, 211 1-4; singles: 488, 27, 416, 201, 513, 703; entire lot for $4.25, post-paid. WILL D. WEST, Ocean Springs, Miss.

WANTED.—At once cash or exchange, back numbers of any the following: The Oologist, published by S. L. Willard, '75 to '89. Vols. I to V, Ornithologist and Oologist Vol. VI, Canadian Sportsman and Naturalist, Vol. I, No. 10; Observer, Vol. I, Nos. 2 and 5; Wilson Bulletins, Nos. 1 to 4; The Hummer, Vol. I, No. 4; Hoosier Naturalist, Vol. III, No. 1, and any No. after No. 6. FRANK H. LATTIN, Albion, N. Y.

EGGS TO EXCHANGE.—For others not in my collection. A few sets each of following, A. O. U. numbers: 201, 388, 390, 412 428, 444 456, 461 467, 488 491, 495, 498, 501, 507 511, 529, 540, 560, 563 581, 587, 595, 598, 608 613, 619, 924, 629, 652 659, 674, 681 683, 687, 704, 705, 721, 725, 755, 761. Have also a few sets of better kinds, which might possibly exchange. All eggs self-collected and prepared, and in finest possible condition. Want only A-1, absolutely reliable sets, preferably New England eggs, in exchange. JOHN GATH, Box 23, Torrington, Conn

THIS PAPER is printed at the Book and Magazine Publishing House of A. M. EDDY, Albion, N. Y.

THE OÖLOGIST.

VOL. XVIII. NO. 4. ALBION, N. Y., APRIL, 1901. WHOLE NO. 175

Who Is An Oologist?

That is a question often asked without being properly answered. The usual reply is: "He is an egg collector." In part such an answer is correct, but only in part, and it is not a very just description, for one may be an egg collector without being an oologist, and one may even, at this period of camera perfection and enlightened methods of bird study, be an oologist without being an egg collector.

Hence, it is evident that for the sake of classification, it is not untimely to ask the question: Who is an oologist? And it may be of advantage to consider the subject carefully, with a view of finding a comprehensive answer to the question.

Firstly, then, let us inquire whether an egg collector is an oologist and if there is not some further requirement than that of being an egg collector in order that he may correctly be called an "oologist."

Ornithology is a science and oology is a branch of ornithology, and a science. An oologist is a scientist, for his object in pursuing the investigation of oology is to increase the knowledge of the subject; to add to science, or to add to his own knowledge. In order to do this, that he may have specimens for use in studying the various types and variations, colors and patterns, he collects birds' eggs, and he is, perhaps, justified in collecting, for his purpose is a good one.

But there are persons who collect birds' eggs merely for the whim of collecting, after the manner of the small boy who collects tobacco tags, without any higher aim than just to possess a big collection or as a pastime. Are such persons "oologists?" Assuredly not, but they are often times honored with the name. They really belong in the same category with the small boy. Then, why should they be called oologists? There is no reason why they should, for they have no claim to the name.

Further, we will ask: Is an oologist a scientist? Most assuredly so, yet he may not wish to add to science any further than the increasing of his own information; but that does not wholly bar him from being a scientist. Of course, he would have a clearer title if he were liberal with the facts he gleans in his investigations and observations. Yet if he is the right kind of oologist, the kind that collects eggs for the purpose of study, he may justly be called a scientist. And if he is, shall he not have an exclusive name? That is just the point.

The name "oologist" is too often misapplied. It is applied to shield the indiscriminate collecting of the small boy, the wanton collecting of the mere egg collector, and those persons whose only object is to own a collection.

So it seems well to separate and classify egg collectors into three classes for the convenience of reference:

Oologists, 1st. class. Such persons as collect eggs for the purpose of study, for the increase of knowledge as to the contour, coloration, measurement, variation of birds' eggs; the advancement of information respecting the nesting habits of birds, their manner of nest building, the effect of food and special environment upon the color of eggs; the length of time between the depositing of each egg of a set; the resemblance of sets of eggs taken from same pairs of birds in consecutive years; length of incubation, and any other facts of value.

Oologists, 2d class. Such persons as

investigate and observe along the lines mentioned, but who do not believe in egg collecting; who, with aid of camera and note book, observe facts and study the coloration of eggs, manner of nesting, etc., without disturbing nests or eggs.

Egg collectors, 3d class. (Not oologists at all,) who collect eggs merely to be collecting; amass collections, merely to be amassing; whose insatiate yearning is to add and add without any just motive, without any beneficial end. This class includes the small boy who, ignorant of the harm he does, collects indiscriminately; but not the small boy with a real desire to study and who collects sparingly and makes good use of the little he collects.

With the present wave of bird protection sweeping the country and the war justly waged by the Audubon society being carried forcibly on, there is no reason why this 3d class of so called oologists(but who are really not oologists at all, but simply egg collectors) should not be harshly dealt with. It would simply help real oology and tend to draw the distinction which is needed between the collecting for scientific reasons by oologists, and the collecting for the sake of collecting by mere egg collectors.

JOHN W. DANIEL, JR.,
Washington, D. C.

Two Odd Sets.

The American Crow in Knox County, Illinois, is an abundant bird, as it is throughout the Illinois corn belt. Every available timber or grove has its occupants during breeding season in accordance with the favorable growth of the trees and the location. I do not think that these birds return to the same timber or grove year after year, although undoubtedly may be found in the same neighborhood of former nesting sites. From my observation, however, the second laying has invariably been found to be close by the site of the first nest, unless in very exceptional cases. This peculiarity makes it possible, although not probable, that two separate pairs of birds laid very exceptionally colored eggs in the same season and only a few miles apart.

There were collected on March 31, 1894 a set of five eggs of the American Crow which have a distinct ground color of light brown, showing not a sign of bluish-green, spotted quite generally with small dots of black more abundant around the large end, and an occasional dot which might tinge on purple. One egg is marked thickly with around the small end, and all the eggs are uniform and of the average size. The bird flew off its nest on approach but remained nearby. The nest was typical of the Crow and was placed in a triple crotch of an oak tree in thick timber forty feet from the ground.

Some two weeks later another collector found a set of four in a timber four miles to the south. The markings on these eggs were more blotched and decidedly more purple in color, distinctly brown in shade but lighter than the former set and eggs average, a trifle larger. Nest construction was almost the same, but the second nest was situated nearer to the ground. A visit to the site of the former nest indicated no cause for a change. I looked thoroughly for a second nest but without result, and I concluded both sets were from the same birds. These two sets are the only ones with the peculiar ground color which have come to my notice in that locality or elsewhere. Unmarked eggs and eggs widely differing in size and coloration are, however, frequently found.

H. M HOLLAND,
San Diego, Cal.

Gleanings from My Note Book.

(*Continued from last issue.*)

April 18.—Barn Swallows arrived here today—8 of them. Yesterday I noted Flickers for the first time. About 50 Gulls arrived this morning.

April 22.—It rained last night so I left my "bike" at home and went over my 15 miles of Hawk route afoot. Another climb to the Red-tail's nest revealed but two eggs so I put them in my pockets and came down jab by jab, to the tune of a pair of angry Hawks' screams. While packing the eggs I was surrounded by a band of Ruby-crowned Kinglets, who were being entertained by a lot of Chickadees. Just as I left the woods I heard the flute-like voice of the Wilson's Thrush. The second Red-tail was near the nest but it was empty and in fact she did not use it nor could I locate her nest anywhere else. From here I crossed over the hills to the valley of Potter Swamp, where bird life differs from any other valley because of so many Woodpeckers. Here there are hundreds of old stubs bordering the woods so that no doubt this is the reason of their abundance. Nine miles south in my valley, or rather, the first one east of Potter valley, I seldom see a Red-headed Woodpecker, but in Potter valley they are very common, as are the Red-bellied, Yellow-bellied, Hairy and Downy Woodpeckers. From here I turn homeward, deciding to follow the crest of the hills, but it was a long nine mile tramp through birdless fields and woods. In the valleys the air resounds with noisy Flickers, sweet carolings of Vesper Sparrows and other common birds, all in abundance but the hills are yet dreary and barren of bird life. As I neared home I struck for the valleys, crossing several ravines, in which I heard Louisiana Water Thrushes in nearly full song.

April 24.—After a short supper and a still shorter cup of coffee, I pushed my wheel up hill for 2 miles to visit a nest of Red-shouldered Hawk. I found her at home but she had laid but two eggs so I left them. This is a late date for this pair to be nesting as I have always taken her full sets by April 12. Later comparison with 5 sets that I had taken out of these woods, which show the same type, prove that this is a new female, which probably accounts for the later nesting. Spotted Sandpipers arrived last night, and Towhees yesterday.

April 26.—At 6:30 p. m. I rode my wheel 2 miles and called on a pair of Red-tailed Hawks and although the female looked strong and healthy, and had a vociferous voice, yet she had only exerted herself to lay one egg—and that's all she did lay—so I left it, 65 feet up in a big oak, to the tender mercies of a group of Crows that were amusing themselves with these Hawks. On my way over I saw a Pied-billed Grebe dabbling in the creek, while overhead a solitary Duck was winging his way northward. After dark I heard a Wilson's Snipe's "heavenly music" as he zigzagged about over the swamp, which was rudely interrupted by a startled Green Heron who emptied the contents of his voice upon the air.

April 28.—Four "Bluebills" (Lesser Scaup Ducks) were shot on the lake yesterday. This morning at 5 a. m. I found a new pair of Red-shouldered Hawks, nesting in a swampy woods near town. The female left the nest as I was passing by, and put up a "holler" for the male who "cackled" his delight at seeing me take his 3 eggs, which were slightly incubated. The nest was an old one, 50 feet up in a big beech tree, and was lined with the ever present branches of evergreen, dead leaves, pieces of bark, and all being beautifully flecked with fluttering downy feathers from breast of Hawk.

This evening I visited a nest of Red-shouldered Hawk about 2 miles away. I had lost track of this pair for 3 or 4 years, but at last they had come back to their old home, 50 feet up in a shag bark hickory tree. She left the nest slowly and without any fear, while I also climbed to the nest slowly without any fear, but judging by the amount of bark at the base of the tree, when I got down, there could not have been very much left on it. However I felt repaid for my lacerated trousers—and feelings—for I brought down a set of 4 eggs. About one mile away I called on another old nest, but the Hawks were not there so I crossed a field to another swampy woods, where I found her sitting on 3 eggs slightly incubated. The nest was just 40 feet, 5 inches up in a nearly dead birch tree, and was an old nest relined with bark strips, pieces of bark, and decorated with downy feathers. As I coasted homeward I heard many Wilson's Thrushes and I remarked that it is noticeable how they seem to be common on the hills but never heard as yet in the valley woods.

April 29.—My trip today was over my main Red-shouldered Hawk route. It was a beautiful day—quite hot in the sun, but rather chilly in the shade. Leaving home at 6 a. m. I tramped nearly 6 miles, visiting two orchards before I found *B. lineatus* at home. This nest was just 27 feet up in birch tree, in woods on hillside. When the sitting female saw me approaching she put up a "boller" and half standing over the eggs she kept uttering cry after cry, and I soon found the reason for her fear for nestled in the lining of pine sprigs, bark strips, grass and moss were 4 large beautiful eggs. She only flew into near by trees—her "cries" soon calling the male, but he was very moderate. It is noticeable that the males' cries are more of a cackle than the females'. He must have been far away for it took him about three minutes to respond to the female's cry for assistance.

I next visited a small woods down in the valley where I collected a set of 4 last year, but this time I did not get a smell although a male's actions led me to believe that he had a nest near by, but I found a pair of Crows nesting in same tree—their nest being placed about 10 feet under the Hawk's old nest.

Continuing on up the west slope I visited three old nests but found the woods Hawkless. Returning to the east slope I found that a pair of Red-shouldered Hawks had fitted up an old Crow's nest in a dry thin strip of woods. The nest was about 50 feet up in a big maple tree and was lined with chunks of bark, pine sprigs, moss, and stuccoed with white downy feathers that fluttered like so many tiny flags. The distribution of these Hawks in my section varies every year. Some years they are abundant, then other years are not near so common. I visited in all 10 nests in as many woods and only found two sets of four eggs. Several years I have taken as many as seven sets over this route.

April 30.—This evening I took a walk in near by woods just for pleasure, little expecting to take anything. I was therefore somewhat surprised to flush a Red-tailed Hawk out of a pine tree and a nest where I took a set of Crow's eggs last year. She had fixed the nest over with pine branches, bag strings, bark strips, grass and hen feathers. On the rim lay an old nest of Red-eyed Vireo. I have been acquainted with this pair of Red-tails for five years and have fonnd them very changeable in regard to nesting. Some years they take up their abode in woods bordering a big ravine across the valley where they have two nests about one-half mile apart. Again they come over to the west slope where they also have

two nests that they generally fix up before deciding which one to use.

Red-shouldered Hawks frequently adorn two nests before using either, and one pair that I know of fixed up three nests and then left me to guess where they finally nested.

C. F. STONE,
Branchport. N. Y,

(*To be continued.*)

The Red-tailed Hawk in Central Illinois.

By far the most common all-the-year-round Hawk in this section of the country. In the early Spring and in the Autumn this species may be seen by anyone that is in the least observant of nature and her doings, hovering in varying numbers over stubble-fields and meadows, and in the Winter season sailing across cornfields in search of its "daily bread," which consists principally of mice and rabbits with an occasional small bird by way of a desert and on comparatively rare occasions the barnyard will be invaded and an unlucky chicken or duck carried away for a "Sunday dinner."

Or during these same seasons if he is not out looking for a dinner he will be seen sitting quietly in a cottonwood tree by the roadside, where he is ever on the alert and "scents danger afar" as anyone carrying a gun who has tried to get in shooting range of him can testify.

Sometimes, however, if you are in a buggy you can approach very near the tree before he takes flight, and occasionally he will even be so trustful (when you do not happen to have a "concealed weapon") as to allow you to drive by, within maybe 30 feet of the tree, without appearing to notice you.

During the nesting season and the time of rearing the young they confine themselves more exclusively to the timber.

More of this species are killed by the farmers and hunters in this locality than of all other species of Hawks combined: because in the first place they are probably as numerous as all other resident species combined, and secondly and more important they are more inclined to get away from the woods in search of food, and this "coming out of the woods" as it were makes them more conspicuous and thus a target for the shotgun.

Their nesting begins early in the springtime, their first sets usually being completed between the 15th and 25th of March. Only one set is laid in a season unless the first is destroyed, when a second set will be laid and if that too be destroyed a third and even possibly a fourth may sometimes be laid under similar circumstances. However I have never taken more than three sets from the same pair in one season. When more than one set is laid I have found the interval between sets to average about 23 days. My experience has been that sets of two and three are about equally numerous.

For their nesting site they almost invariably choose one of the tallest trees if not *the* tallest tree in any particular piece of timber, and usually the most inaccessible possible position on the upper and outer branches of the tree is where the nest will be found, although the position in the tree or rather the distance from the trunk of the tree will vary more than the height of the nest in the tree or the height of the tree. The general height of the nests in this county (Champaign) is from 60 to 110 feet, with perhaps an average of 80 to 85 feet. Of course an occasional nest will be found on either side of the above limits.

There seems to to no preference shown for any particular species or variety of tree. The only question on this subject that seems to interest them is, "Is it a *tall* tree?" And if this can

be answered in the affirmative that tree is as likely to be chosen for a nesting site as any other tree of the same height whatever the species.

Contrary to what seems to be the rule in some sections of the country, they, in this locality, rarely occupy the same nest more than one season, an entirely new one (usually not far from the old one) being constructed each year, or two, three or four in a year if that number of sets are laid.

After incubation has begun they are,, as a rule, very close sitters, refusing to leave the nest till you are under the tree and sometimes not until you have rapped repeatedly on the trunk of the tree or thrown several clubs among the limbs. I recall one instance in which I failed to dislodge the female from her nest by even these proceedings, although I rapped heavily and repeatedly on the tree trunk and threw clubs until my arms were tired, several of the clubs going very close to her. She stuck to her nest till my climber was within 20 feet of her before she took flight.

Almost without exception the sets from a pair of birds show a marked individuality as to the number of eggs in a set, size, shape and ground color of the individual eggs, and color or colors and degree and intensity of the markings. My experience has suggested to me that the plain or very slightly marked sets are laid by young females, and that as the age of the female increases the degree and intensity of the shell markings increase till the limit for that particular female is reached.

Have any of my readers made obser vations upon this point? If so, *did* the degree and intensity of the markings *increase* with the *age* of the bird up to a certain limit, or did it *not?*

What is more exhilerating and enjoyable than a drive to the country and a tramp through the woods in the middle of the Red-tailed Hawk season (April 1st to 15th) a time when all nature is just beginning to put forth the buds of a new life? What more interesting than to watch a Red-tailed Hawk sailing, floating back and forth across a field, now moving swiftly for a few paces as though borne by a brisk breeze and again hovering for moments above a spot as though caught in a dead calm and all the while with scarcely a visible movement of those majestic sails? What will more tend to draw one's thoughts from the things of earth and to direct his mihd to that great home above to which all mankind should aspire, to impress upon him the great wisdom and goodness of his Creator, than to watch a Red-tailed Hawk when he takes upon himself the role of a Skylark and soars, at first in broad and sweeping circles, each one a little higher than the preceding, and then in gradually narrowing zones, but ever "onward and *upward*" till he is a mere speck outlined against the blue sky and then at last the eye can follow him no more and he disappears from view as though the very gates of Heaven had opened and allowed him to enter in?

R. L. JESSEE, M. D.,
Philo, Ill.

Queer Nesting.

In the December OÖLOGIST I notice that A. G. Prill of Scio, Oregon, mentions finding "a nest of the Mountain Partridge containing 11 eggs of this bird and 9 eggs of the Ring Pheasant."

He says that this is the first time that such an occurrence has come under his observation, and that the Partridge was sitting on the eggs and the Ring Pheasant was not about.

I do not wish to make any corrections to Dr. Prill's notes, but simply wish to add a few words, as I have had some experience along the same line.

I have found the eggs of the Ring Pheasant in other bird's nests at least a

score of times and in every case the Pheasant left and the other bird did the incubating.

Have often found from one to eight (usually three or four) of their eggs in the nests of the Mountain Partridge, Oregon Ruffed Grouse and the Sooty Grouse and even in the nests of domestic hens. Have found nests which contained eggs of the Ring Pheasant, Sooty Grouse and Mountain Partridge. Each time the Sooty Grouse was incubating all the eggs. I have also found nests containing eggs of the Ring Pheasant, Mountain Partridge and Oregon Ruffed Grouse, the latter doing the incubating.

A friend of mine informs me that he found a nest which contained 6 eggs of the Ring Pheasant, 6 Sooty Grouse, 4 Oregon Ruffed Grouse and 3 Mountain Partridge eggs and the Sooty Grouse was sitting on the eggs.

As to what would become of the young hatched from such a "mix up" as this I can't say; but I know of one case, two or three years since, of a Sooty Grouse hatching five young Grouse and three young Ring Pheasants. She soon took them all to a wheat-field where I often saw them. As soon as they were old enough to fly the Grouse mother would, when disturbed, fly up into an old dead fir tree and call and the young would all follow her, Grouse and Pheasants alike. Two of the Pheasants were males and it was a rare sight to see them, with their long tails, sitting up on the limbs of an old dead fir tree, with the Grouse.

ELLIS P. HADLEY,
Dayton, Oregon.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 5. ALBION, N. Y., MAY, 1901. WHOLE No. 176

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No. 176 your subscription expires with this issue
180 " " " " Sept., "
184 " " " " Dec., "
190 " " " " June, 1902

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This May OOLOGIST was issued May 2d. The June issue will be printed on May 25th. Copy intended for that issue must be forwarded by return mail.

COLUMBIAN CHAINLESS. 1901 model. If you waat a bargain, part cash and part eggs, write me at once. Cheaper wheels too. BENJAMIN HOAG, Stephentown, New York.

TO EXCHANGE.—Birds Eggs, Minerals, Books, Magazines and Autographs for Thoroughbred Poultry or Eggs, Pet Birds, Autographs and Sea Curios. F. O. NELSON, Meridian, Ada Co., Idado.

FOR SALE CHEAP.—A $50.00 No 15 32-35 Maynard target rifle with case and reloading tools, or exchange for desirable eggs in sets. E. J. DARLINGTON, Wilmington, Del.

YOU WILL WISH for Nowell's Collecters' Tool while in the woods this spring. Don't reproach yourself after it is too late—order one now. J. R. NOWELL, Anderson, S.C.

TO EXCHANGE.—A1 Skins of New York birds for those of other localities. Any person sending $1.00 for subscription to Recreation will receive four prize bird photos (from life). GEO. C. EMBODY, Hamilton, N. Y.

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WANTED to buy for cash.—Rare singles of all birds eggs from No. 1 to 380 and fine, perfect sets of eggs from 380 to 768, also rare small skins. Must be cheap for spot cash. Desired only for private collection. K. B. MATHES, 154 Ellicott St., Buffalo, N. Y.

EXCHANGE.—Stevens 44 cal. "Premier" Rifle. 50 everlasting shells, tools for smaller cal. 25 or 32. Colt 41 cal. Pocket Revolver. Banjo, tags for Colt or S. & W. Revolver 32 cal. F. H. RICKER, Box 38, Lisbon, Me.

BOTANICAL SPECIMENS for sale; or exchange for southern, western or Canadian species. Also a Yellow Rail skin to exchange for best offer in birds eggs. THOS. A. BONSER, Carey, Ohio.

COLLECTORS ATTENTION!—Have you seen my water blower for 1901? The finest thing for eggs to date. For sale or exchange for sets at ¼ list price. M. J. CONWAY, 584 6th Ave., Lansingburg, N. Y.

TO EXCHANGE with western collectors, one pair heavy climbers, to be shipped from near Kansas City, with or without straps. Can use sets or singles of 29, 53, 74, 77, 125, 140, 212, 214, 219, 221, 261, 278, 293a, 292, 294, 297a, 305, 325, 331, 339b, 342, 362, 373c, 397, 399, 408, 429, 430, 431, 452, 546, 552, 554b, 561, 601, 611, 612, 616, any Shrike, Vireo, Warbler or Chickadee, 758, 746, 742, 743a. Address ERNEST H. SHORT, Box 173, Rochester, N. Y.

FREE.—Wishing to get statistics regarding my Collectors' Tool from different localities, I make the following offer: 1st prize, set 428 n-2, for the most noteworthy instance of collecting with the tool; 2d prize, set 729 1-3, for securing eggs furthest out on limb; 3d prize, a year's subscription to OOLOGIST, for securing eggs highest above collector. Other special instances rewarded. Artificially placed eggs not allowed. Prizes awarded and result announced in August. J. R. NOWELL, Anderson, S. C.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

WANTED:—Sets of 58, 64, 76, 137, 139, 261, 273, 337, 339, 373, 387, 388, 390, 393, 394, 501-611, 614 and others, especially 218, 230, 334, 364. Exchange or cash. All answered. A. E. PRICE, Grant Park, Ills. 177

FOR SALE:—Fancy and common Geodes, ranging in price from 25c. to $5.00; halfs from 10c to 50c. Special rates to colleges and museums. H. K. McLELLAN, Hamilton, Hancock Co., Illinois. 179

OOLOGISTS WANTED:—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

WILL COLLECT unusually fine sets this spring at ¾ cat. rates for cash. Datas will be models. Get list of possible takes. "First come, first serve." J. R. NOWELL, Anderson, S. C.

FOR SALE.—1 Timber Wolf skin for mounting with skull and leg bones, $10.00; 1 pure white Snowy Owl mounted, $10.00; 1 Almost White, $7.00; 1 Great Horned Owl (subarticus) $3.00; Saw-whet Owl, $1.00; Sharp-tailed Grouse, $2.00; Canada Ruffed Grouse, $2.00; Prairie Hen, $2 00; Spruce Grouse, $2.00; American Bittern, $1.50; 2 Cow Moose heads unmounted, skull and scalp, $6 00 each; Doe Elk, 13.50. All goods prepaid by mail or express. Will send C. O. D. if desired. CHRIS P. FORGE, Taxidermist, Carman, Manitoba.

WANTED.—Any complete volume of O. & O., Oologist previous to '95, Auk, and Recreation previous to '97, also Recreation Jan. and Feb. 1900; Osprey Vol. I, Nos. 2, 4, 6 and 11-12; Nidologist Vol. I, Nos. 2, 4 and 6; Feather, Vol. I, Nos. 1 and 2; Iowa Ornithologist Vol, I, No, 1; Vol. IV, No. 4; Oregon Naturalist, Vol I, Nos. 2, 3 and 4; Ornithologist (England) Vol. I, No. 6; Popular Science News, Vol. XXXII, No. 12; American Osprey, Vol. I, Nos. 1 to 7 inclusive; Bittern (1900) Vol. I, No. 3; Midland Monthly June and August, '97; Western Ornithologist, Vol. I, No. 3; Oologist, July, '88; and many others. Send full list.

Will give in exchange for same hundreds of duplicate natural history magazines (many complete volumes), about 60 first class sets with datas, 150 singles, stamps, ancient Indian relics, Western bird skins, a few curios and a number of old medical books. Write at once. All answered. ALBERT F. GANIER, Bowmar Ave., Vicksburg, Miss.

FOR EXCHANGE.—1 2 5, 3 2-6, 4 3-7, 6 1-7, 16 2-1, 63 1-3, 70 13-3, 77 1-3, 80 3-4, 106 5-1, 125 1-4, 130 1-9, 141 2-9, 142 1-10, 143 1-6, 184 2-3, 191 2 4, 194 1-4, 199 1-3, 202 2-4, 211 1-8, 212 1-10, 239b 1-15, 390 1 7, 477 1-5, 488 1-5, 2-4, 488a 1-4, 497 1-4, 511b 1-5, 540 1-3, 560 2-4, English Sparrow 2-5, 561 3-4, 563 1-4, 1-5, 581 4-5, 593c 1-4, 595 1-4, 613 1-4, 622 1-7, 622a 1-5, 683 1-4, 704 1-4, 705 4-5, 719b 1-6, 721b 1-6, 725 1-4, 2-6, 735 1-7, 761 1-4, 375d 4 2, 481b 2-3, 448 6-5, 1-4, 519 20-5, 713 2-4, 3-5, 710a 4 3, and many others. I want to trade these sets for full sets of Limicolae or Raptores or for ornithological publications. For good full sets of Raptores—any species—I will allow 25 per cent. over catalogue rates. Taylor's list must be basis of exchange. H. H. DUNN, Fullerton, Calif.

WANTED.—May number, 1888, Vol. XXII, American Naturalist. WILLIAM BREWSTER, Cambridge, Mass.

WANTED for cash or exchange.—Eggs of Golden Eagle, American Flamingo, Limpkin, Wilson's Snipe and many others. I have on hand these, 59, 202, 221, 226 fine series, 258a 5-4 very fine, 289 1-11, 301, 331, 333, 335, 337, 337a, 366, 487 beautiful series, 511b beautiful series. All first class and choice. J. W. PRESTON, Baxter, Ia.

FOR SALE OR EXCHANGE:—Marlin repeating rifle 22 cal., nearly new, for pair good Field Glasses; Mandolin for Coues' Key or Ridgway's Manual; mounted birds, Red-winged Blackbird 75c, Red-bellied Woodpecker 75c, Sparrow Hawk 75c, Quail $1.00, Coot $1.00, Bufflehead $1.50, Squirrel $1.00,, Fox for best offer. Send for photos, 3 years' Anthony's Photographic Bulletins. If interested, write, J. D. ANTHONY, Waubeek, Ia.

WANTED:—Al sets Nos. 83, 172, 192, 193, 206, 210, 228, 258a, 261, 286, 301, 302, 310 478, 486, 618, 701. Can offer good sets, Belgian Hares, Abyssinian and English Cavies, Fancy Pigeons and Pit Games. ALMON E. KIBBE, Mayville, N. Y. 177

FOR EXCHANGE.—One Bristol steel rod, $5; eggs in sets; one Davie's key, 5th edition, new, $2.25; complete file Natural Science News, $2; twelve back Nos. Osprey, including seven Nos. of Vol. one, $2; Vol. three Museum, $1; twenty Nos. of Oologist, back of 1896, $1; B-flat cornet, $8; three-inch T-perches painted white or natural finish, 10c each. Will give 50c per 100 in exchange for any of the following tobacco tags: Star, Good Luck, Horse Shoe, Master Workman, Standard Navy, Old Honesty, Drummond Natural Leaf, Sickle Planet, Cross Bow, Brandy Wine, Nobby Spun Roll, Spear Head, Neptune, J. T. Will also give 40c per 100 in cash. E. L. HALEY, Rangeley, Me. 176

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THE OÖLOGIST.

VOL. XVIII. NO. 5. ALBION, N. Y., MAY, 1901. WHOLE NO. 176

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

The Western Red tailed Hawk.

(*Buteo borealis calurus.*)

To Raptorial birds, especially such species as partake of the nature of the Vultures and other carrion eaters in their habits, Southern California offers, next to the countries of the Torrid zone, most ideal conditions, both climatic and geographical, for the rearing of their young. The rains of the winter equinox have usually abated by the last week of March, so that Hawks, Crows, and others of the larger birds which occupy open nests can by that time or earlier have their last year's homes renovated or if these be destroyed or occupied by some hardier Owl, be well started on the construction of

EGGS OF THE WESTSRN RED-TAILED HAWK.
(From a set in the author's collection.)

new ones. Occasionally, as was the case this season (1901) heavier rains came on just about the time these birds had begun to deposit their eggs and their nidification was correspondingly retarded.

Orange county, where my home and principal collecting grounds have been

for the past several years, is very nearly in the center of the seven counties lying south of the Tehichapi Mountains which are known as Southern California. It has some frontage on the Pacific Ocean, though no ports or watering places of importance are located on its coast line. On its south eastern border hills come down to the sea and thence running north, north west they form a moderately well wooded boundary along its northern line. Otherwise the county is about equally divided between level cultivated lowland and the rolling barley fields of the mesas.

In the heart of the hills before mentioned there are numerous large ranches within whose bounds the Mexicans, notorious wood theives, have not been permitted to carry on their wood-cutting operations. Many sycamores and oaks dot these ranches especially wherever water is to be found in the smaller canyons, and in these the Red-tails find suitable nesting sites. Of course there are other Hawks which breed in the same localities, but the Red-tails are the most numerous by about twenty-five to one. It has been my good fortune, ornithologically speaking, to be located in this region for the past three and a half years, but it was not until last year that I thoroughly "got onto the curves" of the nesting Red-tails, and the result was seventeen sets saved out of about twenty collected. Three of these were of four eggs, six of three, and the remainder, eight sets, of two eggs each. I think this porportion will hold good in almost any representative series of sets of Red-tailed Hawks collected in Orange county So far this season I have taken three sets of four, four sets of three, and four sets of two which were preserved. One set, taken from an immense nest forty feet up in a sycamore—which, by the way, had no branches for the first thirty feet—and consisting of two eggs was too far gone to be saved. This set had evidently consisted when first laid, of three eggs, for about half of the shell of one egg was found clinging to the edge of the nest. Of course they were finely marked. Who ever saw an impossible set which was not beautiful?

Again, only last Sunday, I climbed over sixty feet to a new nest in an immense old sycamore and found *one* heavily incubated egg. No broken shells were visible nor to all outward appearances, had anyone climbed the tree ahead of me. Last season, this pair laid a nice set of four heavily marked eggs in a nest in another sycamore not fifty yards from this one. This is not an "off" year, for two pairs of these birds which laid but three eggs each last year, have already presented me with sets of four each and tomorrow I am going to see what they have done in the 'way of second sets.

Several pairs of Red-tails are nesting on low cliffs, buildings or ledges or else in crevices of the rocky wall, while I know of one nest, which held three young in May of last year, which was built in a depression in the top of a huge boulder projecting out from from a sloping sidehill. Now and then, though seldom, a nest will be built in a wild walnut growing on the steepest slope of a grassy hill. As these trees are seldom over twenty-five feet in height and correspondingly small of growth, such nests are the collector's delight. The photo presented herewith is from a set of four eggs taken from such a nest situated twenty feet up in a walnut on a sidehill. No bird was on the nest and neither one put in an appearance until I had climbed to the nest, when both commenced their usual screaming and kept it up until I left the tree. Portions of two lizards and a gopher snake were in the nest as well as remains of a ground squirrel and a kangaroo rat. The whole outfit smelled like a glue factory. One egg is in-

fertile and is the most heavily marked egg of the set. The other three contained small embryoes. The date was March 28th, and this was the first set of that year. This set of eggs measure respectively: 62x47.5; 61x47; 61x46. These measurements are in millimeters and the first is the infertile egg. Compared with the average of several sets of three eggs of the Eastern form of the Red-tail (62x49; 62x48; 64x49 mm.) they seem to be smaller, yet this is a set of noticeably large eggs as compared with about twenty other sets now in my collection, and collected by myself in the past two years. Four sets of Krider's Hawk, collected in Iowa, Texas, and Colorado seem to average smaller even than sets of the Western Red-tail, and are not marked so well either, though the Eastern Red-tail is far ahead of our form in matter of markings. Several sets of two eggs of the Western species which I now have are either entirely unmarked or else one egg has a very few faint dashes of rufous.

Harlan's Hawk has been taken here in the winter and not more than a year ago a pair were mounted by a Los Angeles Taxidermist, so I am constantly on the look out for them. Any one who has collected eggs of this bird and will favor me with good description or other notes will do me a favor for which I will pay either cash or specimens and I am sure such an article would be read with interest by collectors who suscribe—as who does not?—to the OÖLOGIST.

If robbed, our Red-tail will almost immediately commence a new nest for the reception of a second set, but will usually occupy the old nest the next year, seeming to become strongly attached to her home. In markings the sets of one pair of birds, *or of the female, if the male be shot,* persist in the same type, but not always in the same distinctness of coloration. One nest of this bird at least was "unavailable" to me this season, though I haven't given up trying for it yet. It is in a sycamore just beside the road and fully seventy feet from the ground. About fifteen feet below it in the same tree is an old nest of the Hawk now occupied by a Pacific Horned Owl, which I suppose, has hatched her clutch by this time.

HARRY H DUNN,
April 10, 1901. Fullerton, Calif.

Gleanings from My Note Book.

(*Continued.*)

May came in bright and clear, but cold, bringing a few King birds, and an Oriole whom I heard chattering but not singing at all. The cold wave reached its climax on the night of the 5th, when a freeze caused the drizzling rain to sheathe the grass and every shrub with fantastic icy forms which sent forth brilliant scintillations as "old Sol" came smiling up over the eastern hills the next morning. Even the set of Red-tailed Hawk that I collected at sunrise were covered with frost, for it seems that when I flushed the female from her nest several evenings ago, she never came back, so I had to be satisfied with two plain eggs.

I have noticed many times that neither the Red-tailed nor Red-shouldered Hawk will return to their nest when flushed from them after dark, even when incubation was well along as it was in this set.

As I left the woods I heard the clear, sweet warble of a Ruby-crowned Kinglet and soon I found him making his toilet as he sat on the sunny side of a pine tree on a dead branch.

No sooner had the cold snap passed away than arrived on the 6th, a great wave of migrants, and every moist woodland, whether on hill or in vale, resounded with melody far sweeter than words can describe. Yet from

secluded spot, or tree-top high, we hear those unobtrnsive "Tsips" which mean so little to the unpractised ear, while to the eager ornithologist it brings visions of some new or rare bird.

Among them there were Redstarts, Maryland Yellowthroats, Black-throated Blue, Black-throated Green, Yellow-rumped, Magnolia, Oven-birds, Chestnut-sided and Black and White Warblers, White-crowned and White-throated Sparrows, Crested and Least Flycatchers, Catbirds, Bobolinks, Scarlet Tanager, and that little bundle of activity, the saucy Winter Wren.

May 9.—I spent this evening searching among the swampy hummocks where a pair of Wilson's Snipe are evidently nesting, but aside from being nearly flushed out of my rubber boots by an American Bittern who suddenly jumped up in front of me and uttered a terrified squawk, my search was uneventful.

May 12.—The corn stubble in swamp has become a most interesting spot, for here are gathered scores of Killdeers and Spotted Sandpipers, either species being capable of furnishing amusement as long as one cares to watch them, besides others of this kind have begun to appear. This morning I saw a Solitary Sandpiper walking daintily around the muddy pools. On the 18th a small flock of Least Sandpipers arrived, followed on the 19th by 15 Semipalmated Plovers, while on the 22d a beautiful male Black-bellied Plover spent the day here. A Least Flycatcher has been tugging away at the fluffy end of our clothes-line, working mostly morning and evening. The female did all the work, while the male followed close at her heels like an arrant taskmaster, his emphatic "che-beck" sounding more like a threatening "you-get," than an expression of encouragement.

May 29.—Appearances are sometimes very deceptive as was an evergreen tree in which I found a rather remarkable state of affairs this morning. I was looking for a nest of Purple Finch and had walked around the tree without seeing any signs of nests, but to make sure I gave the tree a gentle number 8 kick which stirred up a lively rumpus indeed, for out of that tree went 6 jabbering House Sparrows, an excited Bronze Grackle and a more excited Robin. Upon climbing the tree I found a small bird village, consisting of 3 nests of English Sparrows, 1 of Bronze Grackle, and 1 of Robin—5 nests within a radius of 4 feet, and all containing either eggs or young.

June 5.—While trying to get in a good place to photograph a Black-billed Cuckoo on her nest I stumbled onto a nest of Maryland Yellowthroat containing 4 fresh eggs. The nest was placed upon a triangle of vines and weeds about 8 inches above the ground. It was a large bulky affair of dead leaves and grasses, lined with fine round grasses and horse-hair. This find so pleased me—for I do not often find a nest of this warbler—that I forgot all about the Cuckoo, who had sneaked away, but I got a fine photo of tho Yellowthroat's nest and eggs "in situ."

June 7.—For some time I have heard the song of a Black and White Warbler, over in woods on hillside, along a bush lot, so this evening I went over purposely to hunt for their nest. I was passing along the edge of the woods, when I heard a rustle of dead leaves, and looking to one side I saw a Whippoorwill fluttering along, stopping however, about 6 feet away, with wings outspread in a wounded attitude. Quickly glancing about me I saw Oh! what I had hunted for for so many years, two beautiful eggs of Whip-poor-will, reposing on a bed of dead leaves underneath a cluster of bushes, near a pile of dead brush.

I wanted a photo, of course, but had not brought my camera, so knowing the Whip-poor-will's tendency to slip out

LATTIN'S CLEARANCE SALE.

SELECTED CORALS, SHELLS, MINERALS, CURIOS, RELICS, &c.

A Barrel of Shells and a Nature Study Collection.

Selected Specimens of Corals, Sea Shells, Minerals, Indian Relics, Curios, &c.

☞The Engraving on last page of this list illustrates many of the specimens offered on following pages. The numbers in ( ) refer to the specimens in this engraving.

BRAIN CORAL, *Meandrina cerebriformis*, (No. 1,) a very fine specimen from the West Indies, 11 in. in diameter and weighing nearly 20 lbs. I will sell for only **$2.50**; its worth more.

PALM CORAL, *Madrepora palmata*, (No. 2,) from the Bahamas. This specimen measures 10 x 12 in. and weighs about 6 lbs. Will sell for only **$1.75**. I have another specimen of about same size, but more of a hand-shaped affair (thumb and fingers, tip of small finger broken) at same price. I also have about a dozen other specimens of this Coral at **35 cts., 50 cts.** and **$1** each. All big values for the money.

PLATE (BRAIN) CORAL, *Meandrina clivosa*, (No. 3,) size 16 x 22 in. and weighs nearly 30 lbs. it goes at only **$4.50** I have another specimen more regular in form, 13 in. in diameter. My price is **$2.75**. Both from the Bahamas.

PINE APPLE CORAL, *Porites astræoides* (No. 4,) from Bahamas, 10 in. diameter, weighs 12 lbs; my price **$1.60** I have also a 7-in. specimen of this species, unbleached——"Niggerhead" Coral, at **$1.20**.

PROPELLER or BUTTERFLY CORAL, *Agaricea agaricites*, (No. 6,) from Bahamas. This specimen measures about 12 in. and weighs 7 lbs. **$2.25** takes this specimen. In '99, secured a bbl. of this Coral and have about a "bushel" left. Can furnish nice "wing" specimens at **10, 15, 25, 35, 50** and **75 cts.** each and have a few of the "butterfly" specimens at **35, 50** and **75 cts.**

BRANCHING, TREE or SPIKE CORAL are terms by which the *Madrepora* Corals are commonly called. I have several bbls. of *Madrepora cervicornis*, (No. 7,) and can furnish specimens at any price from **1c.** to **$1** each and can furnish schools or teachers in bulk at very reasonable rates. Its worth loose, without packing, about **$5** per bushel. I have also many of the rarer *Madreporas* and the following are of the close "spike" or "prong" form and not in long branches:

Madrepora spicifera from Samoa, 8 x 12 in., **$1.50**; 5 x 9 in., **75c.**; also an 18 x 15 in. specimen at **$3.50**.

Madrepora obscura, a brown-colored species from Torres Straits, about 15 in. diameter, at **$4.50** Could be broken up into 100 **10c.** specimens. Another 7-in *Madrepora*, white, from same locality at **$1.25**.

Madrepora plantaginea from E. I., an 8-in. specimen at only **$1.20**. I also have half a dozen clumps of *Madrepora* from Fiji Islands, ranging from 7 to 14 in. diameter, at **$1.50**, **$2.50** and **$3.50** each.

Stylophora, a branching Coral from Red Sea, 5-in. clump, **75 cts**; 7-in., **$1.50**.

Madrepora abrotanoides, a 10-in. spray from Fiji, **$1.50**.

Seriatopora, (No. 11,) from West Africa. This beautiful, delicate and almost perfect clump of Coral has been one of my star attractions for past two years. I have not cared to sell this specimen and have held it at **$10**. and could have sold it a number of times had I been willing to shade the price a little; it cost me **$6** in cash and I will now sell at this figure.

ORGANPIPE CORAL, *Tubipora musica*, (No. 13) from Singapore; this a section (½) of a clump, measuring about 9 x 11 in. and this section has been held at **$4 50** Will sell for **$3.25**; another specimen, 8x10 in., at **$2.50**. I have a case of this beautiful and interesting species direct from Singapore and can furnish selected specimens at following low rates: 2 in. **10c.**, 3 in. **25c.**, 4 in. **35c.**, 5 in. **50c.**, 6 in. **$1**.

CORALS not shown in engraving. I have two mammoth Rose Corals, *Symphyllia*, from Torres Straits; an 8 in. one at **$1.50** and a 5½ in. one, more symmetrical and beautiful, at same price.

FEATHER CORAL, a 10 in. "bum" specimen **50c.**

MUSHROOM CORALS. Fine specimens; 5 in. diameter of *Fungia patella* from Zanzibar at only **35 cts.** each. Selected specimens of *Fungia elegans* from Gulf of Calif., 1½ in., only **12c.** prepaid.

CRATER or VASE CORAL, *Turbinaria cinerascens*, from Torres Straits, somewhat resembles the Neptune Cup Sponge, (No. 8) This specimen stands 10 in. high and measures 11 in. across top; a 3 in. triangular piece has been broken out of one side; will sell for **$2.50**.

PINK CORALS, *Stylaster*, from Samoa, and the RED and YELLOW CORALS, *Distichopora*, from Hawaii. I have hundreds of specimens ranging from a few cents to **35 cts.** in value.

PRECIOUS CORAL, *Corallium rubrum*, from Mediterraman Sea A fine two in. clump in muddy matrix, with three specimens imbedded of *Megerlea truncata* (a Brachipod of the Lamp Shell or *Terebratula* Family.) My price for this specimen is **$1.90.** I also have a quantity of this Precious Coral in polished twigs, such as are used to make into the good old-fashioned Coral Strings or "Beads," once so commonly used for neck adornment. We used to wholesale this at **$8** per pound; will close out what I have left at **25 cts.** per ounce or **$3** per pound. Samples 5 cts.

WORM "CORAL," Vermetus (No. 15.) A clump or mass of these peculiar worm-like shells from the W. I., measuring 5 x 7 in. and weighing 2 lbs.; could be made into hundreds of small specimens; $2.60.

NEPTUNE'S CUP or Vase Sponge, Paterion (No 8,) from Tasmania. An odd and curious specimen worth from $15 to $20, and we have always held this specimen at $10. It measures 24 in. high and the vase portion is 12 in in diam It now goes for only $6 80. Its a bargain for some one wanting such a specimen.

AN EGYPTIAN IDOL, (No. 21), carved from stone or lava 1,000 or more years ago, represents an elephant or some other animal, measures about 4 x 2½ in. Secured by a missionary acquaintance from a mummy pit in Egypt and guaranteed genuine Only $3 05.

CHINESE CURIOS.

CHINESE GOD (No. 5) of white porcelain, 6½ in. high, from the collection of an old Chinese traveller. My price is $1.90. I also have a Chinese cash sword at $1.60. Shuttle cock of feathers. snakeskin and "cash" 45 cts. prepaid.

SNUFF BOTTLES, size about 2 x 2½ in. No. 1. pottery, ornamented, etc., 45c, prepaid; No. 2, Jade, carved and ornamented, $1.35, prepaid.

STONE WATER VESSEL, 1 x 2½ in. of brown mottled "Jade," 65 cts., prepaid

OPIUM PIPES, No. 1, (No. 16) 24 in. ebony stem, 4 in. brass mouth piece, brought by sea captain from China, $1.60, prepaid; No. 2, (No. 21) bone mouth piece, 18 in. bamboo stem, 90 cts., prepaid; No. 3, pipe only, (bowl) 40 cts., prepaid.

SPANISH CROSS inlaid with straw from an ancient church in Jemez, New Mex. Curio dealers would ask $5 for it, but it's yours, prepaid, for $1.45.

SAWFISH SAW (No. 23) This specimen is the one next to Coral specimen No. 3, and measures three ft. in length. It's worth $3.25. The others in engraving have been sold. I also have two small specimens with snout or head back of eyes attached, 10 in. spec. 75 cts., prepaid; 12 in. spec., $1.40, prepaid; all from Gulf Mexico.

SHARK JAW from Martha's Vineyard. A small but fine and perfect specimen. About 4 x 7 in., with nearly 150 teeth. Only $1.80, prepaid.

ALLIGATOR (No. 30.) This 5 ft. specimen was from west coast Florida and was one of the finest specimens I ever saw. I purchased it at the Atlanta Expo. in '95, and has been a constant companion in my expo-peregrinations in the north since that date. I've sold dozens of others, but I've always "hung on" to this specimen. It's but little the worse for travel. My price has been $10. Now $6.50.

ALLIGATOR TEETH 15 to 20 years ago alligators were abundant. The swamps and streams of Florida was fairly alive with them. Their teeth were used by the hundreds of pounds for jewellery purposes and good teeth were staple as flour or sugar at $2 per lb. A pound of ½ to 1 in. teeth numbers over 1,000 (about 1,200) teeth and represents the product secured from 15 or 16 alligators ranging from 5 to 12 ft. long. The craze for the jewellery has waned in most sections and I have many pounds of teeth on my hands. To close them out I will sell single pounds at only 50cts; 5 lbs. for $2; or 10 lbs. for only $3. Just think of it, over 10,000 teeth, which represents the entire product from over 150 large alligators for only $3.

SHELL AND MOSS WREATH (No. 24) Made from the beautiful sea mosses and small shells from the California coast. In box 16 x 20 in. these wreaths sold at the World's Fair at $20 each. A few of the petals, etc., have been loosened through shipping. My price only $4 60

EGGS OF THE EMEU (No. 28.) Nothing attracts greater attention in the egg line than the large dark green, nearly black, pebbled egg with a lighter ground color of this peculiar Australian bird. Every egg collection would have contained one of these eggs and even the laity would have had them on their "what-nots" or among their "bric a-brac" had not the price—which has always been $2.50 -been a little too high. We now have a limited supply at only 84 cts. each, prepaid This rate will hold until May 1st, only. I have a few cracked specimens and a few casts at 50 cts. each.

OSTRICH EGGS (No. 27.) Stock all sold. Can secure fair specimens at $1 each. Have a few good 2ds. at 60 cts., a few badly damaged specimens at 30 cts. and have one large flattened warp-sided abnormality at $1 60.

PIPE-FISH, Sygnathus, (No. 31) from Gulf California. We have a few choice specimens of this queer and rare fish, with bony armor, the first lot we ever secured in sufficient quantity to place on sale. Prices, prepaid, at following ridiculously low rates: Specimens under 10 in., 35 cts.; 10 in., 40 cts.; 11 in., 45 cts.; 12 in., 50 cts.; 13 in., 60 cts.; 14 in., 75 cts.; 15 in., $1.

THE SEA HORSES, Hippocampus, are also of same order as the pipe fish and with bony armor. We have choice specimens of both the Atlantic and Pacific species. Prices of either, prepaid, 15 to 35 cts. each.

PAPER NAUTILUS, Argonauta Nodosa, (No. 22.) This beautiful $10 specimen has been sold. We have a few small specimens of the ordinary Argonauta Argo from the Mediterranean Sea, at 50 cts. each, prepaid.

CHAMBERED NAUTILUS, Nautilus pompilius, from Polynesia Decoricated specimens (No. 9.) This mammoth 9 in. specimen, with lip checked, $3.25; ordinary 6 to 8 in. specimens, $1 25 to $2.50 each. Specimens 5 to 6 in. in natural condition, 50 cts. to $1 each; specimens bisected to show structure, (No. 32) both halves, 75 cts. to $1.50; siphuncle, ½, 50 cts. to $1; the half not showing siphuncle, 35 cts. to 75 cts. I also have a lot of broken and damaged shells, valuable for teaching, etc. Will close out at only 25 cts. each. First orders secure best specimens. I also have one very fine bisected shell with animal in glass jar containing alcohol, (No. 17) from Western Polynesia. A rare specimen and seen only in a few of our larger museums. It cost me $9 as a dealer. Will sell for $7.75. I have a beautiful 4½ in. specimen of Nautilus umbilicus from Australia at $1; lip checked.

CHRYSANTHENUM SHELL OR THORNY OYSTER, Spondylus pictorum, (Nos. 12 and 16) from Gulf of California. These beautiful shells usually sell at $2 to $3 each and range all colors from pure white to bright red. I have a few left and will close out at $1 each. I have a few foreign specimens of this family from East Indies, etc., at 50 cts. each; worth regular up to $3. First orders best specimens; have 3 or 4 species, as aurantia, wrightii, purpuraceus, etc.

TRUMPET SHELL, Triton tritonis, (No. 25) from Indian Ocean. Used as a teakettle by the natives of the Typinsan Archipeligo. This specimen is 16 in. long and was used for this or a similar purpose; $3.25. The other specimen in engraving also has holes through shell for or-

namental or some other purpose; $2.20. I also have a few very fine specimens of this shell at following low rates: 6 in. specimen, 50 cts; 8 in., 75 cts.; 10 in., $1 to $1.50; 12 in., $1.50 to $2; 15 in., $3. I also have a couple baby specimens 2-3 in. at 35 cts. each, prepaid.

SHELL VASE (No. 14) made from large specimens of Green Snail, Turbo marmoratus, from Philippines. These vases are made from selected 5 to 6 in. shells and are worth $1.50 each. I also have from same shell vases, basket style, with carved handles, etc., all in one piece, at only $1.50. I can also furnish these shells, with Lord's Prayer engraved on, or made into call bells at $1 50. (Regular price of all these $1.50 articles is $2.) Shell vases of same shell similar to (14) made from 3 to 3½ in. shells, worth 50 cts. each; prepaid, only 35 cts. Shell napkin rings from sections of this shell, plain. 15 to 25 cts., prepaid; engraved, 25 to 35 cts., prepaid; small 3 in. shells of this species in natural condition at 15 cts. each, prepaid.

SIOUX TENT. Child's play-tent, 15—5 ft. Willow tent poles (No. 26.) Tent cloth or cover measures, unpitched, two extremes—about 3 x 10 ft. It is spread on three top steps of engraving. Material of common factory and decorated in colors by some Sioux artist. This is guaranteed genuine and has been in my possession for 8 or 10 years. My price is $3.80, and its well worth double. The Sioux Pipe (No. 20) has been sold. I have, however, a similar one, length 14½ in., both stem and bowl of red Catlinite or Pipestone, Indian make, unused, angular and more ornamental than No 20. My price $1.90.

INDIAN BASKETS made by the Hoopa Indians of Humboldt Co. Calif., from natural fibres, artistically woven and arranged in colors, water tight, bowl shape. The Indians sell them "on the ground" at $5 each. I have the following sizes and will send, prepaid, at prices named: 3 in. deep by 7 in. diam., $3 15; 3½ in. deep by 7½ in. diam., $3 60; 4½ in. deep by 8½ in. diam., $4.10. I consider the best the cheapest.

AZTEC PITCHER. Genuine aztec and purchased from Mexican Village at Atlanta in '95, with a guarantee that it was the ancient. I believe, however, that it was made recently by descendants of the ancient aztecs. Material black clay and covered with carvings, faces, etc.; $2.60.

MOUND BUILDER'S RELICS. I have hundreds of ordinary arrow and spear heads and a few of the more common pieces such as sinkers, drills, scrapers, etc., but have very few of the rare and desirable ones. The following covers what I have left: Stone Pipe, (Hornblende or hard mica schist) (No. 19) size 2x4 in., wgt. ½ lb., from Brant Co., Ont., a very choice specimen, $5.10, prepaid; another from same locality of a more common and unattractive form, 3½ x 2 in., 7 oz., hatchet shape, $2 20, prepaid; Slate Pendant from Waterloo Co., Ont., 2 in. diamond shape, drilled, prepaid 70 cts.; Hematite (Limonite) Celt from Van Buren Co., Ark., 2 x 5 in., 1 lb., prepaid, only $1.20. Ordinary Stone Axe from Cumberland Co., N. J., (Serpentine, grooved, 4 x 5½ in., 2¾ lbs.) $1.30. I also have the contents of a cache from Rowan Co., N. C., consisting of about 375 unnotched arrow or spearheads of uniform size and form, about 2½ long, will sell as a whole for only $28-10.

CELTS. Various sizes and material from near Baum Village site, Paint Creek Valley, O., at from 45 cts. to $1 each, prepaid.

NET SINKERS made from Iron-stone, Limonite, Concretions, Van Buren Co., Ark., weighing from ¾ to 1 lb. and measuring 2½ to 3½ by 3½ to 4½ in., each 45 cts.

PESTLE of quartzite from Ky., 1½ lbs., 2½x 4½ in., 85 cts.

ARROWHEADS. Van Buren Co., Ark., assorted; poor, per doz., 30 cts.; ordinary, 60 cts.; selected, $1.

BIRD ARROWPOINTS. Same locality, 9c. to 24 cts each, prepaid.

BIRD ARROWPOINTS. The famous little beauties of jasper, chalcedony, obsidian, etc., from Willamette Valley, Oregon. I have a few ordinary ones left at 15 to 35 cts. each, or 5 assorted for $1.10, prepaid.

POTTERY fragments with markings, 6 pcs., Ky. and N. Y., lot 40 cts.

FIVE good jasper and flint arrowheads from Mo., lot 50 c., prepaid.

EIGHT damaged pcs. Rowan Co., No. Car., lot 25c., prepaid.

FOURTEEN white flint arrowheads from Englewood, Ills., fair lot; lot, prepaid, 95 cts.

MILKY QUARTZ DRILL, So. Car., 1½ in., made from broken arrowhead, 25 cts., prepaid.

GLASSY QUARTZ, leaf shape arrowhead, So Car., fair, 35 cts., prepaid.

SCRAPERS. Nine small ordinary ones from So. Dak., chalcedony, etc., lot, prepaid, $1.

OVAL DISC shaped, pc. from Ind., 2 x 2½ in., 23c., prepaid.

SLATE ORNAMENT, Waterloo Co., Ont., round, 2 in. diam., hole in center, 85c., prepaid.

SANDSTONE ORNAMENT, Orleans Co., N. Y., very rare, unattractive and not ornamental, 3¼ in. diam., about 40 tally marks, one perforation, another partially through, $2.10, prepaid.

SPEARHEADS, Orleans Co., N. Y., rare in locality, 3 in., lot (two), prepaid, 75 cts.

CUMBERLAND CO., N. J. One knife and eleven selected arrowheads, lot, prepaid, $1.25.

MONTGOMERY CO., PENNA. A selected lot of ten pieces of Jasper and quartzite, as follows: 1 draw knife (?), 1 scraper 2 small warclub heads, 6 arrow or spearheads; lot, prepaid, $2.10.

BONE NECKLACE. Thirty-two perforated (lengthwise) phalangeal bones from an Indian burial ground in Oxford Co., Canada, prepaid, $3 60.

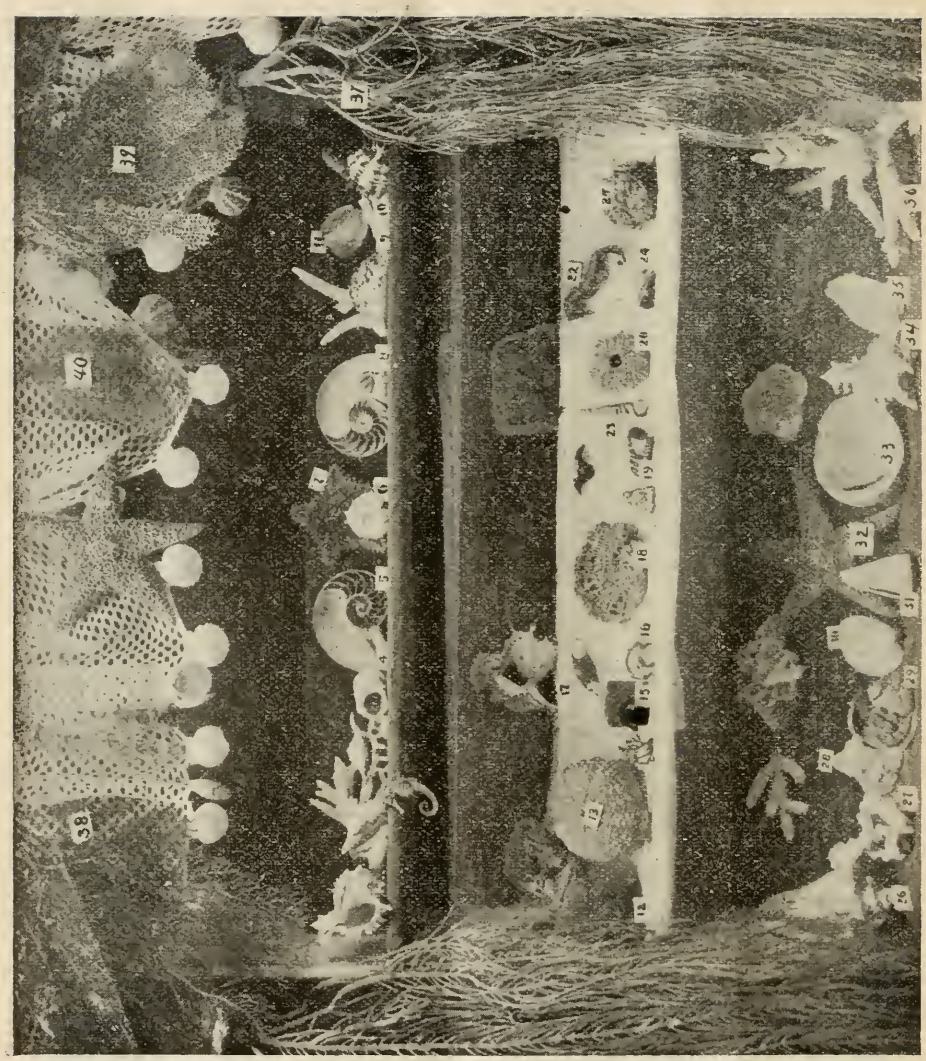
BOTRYOIDAL GROUP OF CALCITES (No. 10.) This magnificent specimen measures about 10 x 15 in. and weighs over 20 lbs. It was taken from a pool of pure water in Crystal Cave, Black Hills. This form is not known elsewhere in the world. Beautiful lemon yellow botryoidal groups of compound and contact thickly studded, small 3-cornered xtals, well worth $15, but will sell for only $8 90.

JOPLIN CALCITES are the most superb rich yellow, with deep brownish base, calcites in the world and occur in single xtals; low, broad scalenohedrons, sharp angles, six-sided, six-faceted, with modifications very pleasing, brilliant, natural polish; translucent ice-like appearance. I have a single crystal, which weighs 28 lbs., and measures 10 x 18 in. It ought to be worth $1 per pound, but I'll sell for $9 30. I have another but smaller Joplin xtal nearly doubly-terminated, measures 6 x 11 in. and weighs over 12 lbs. and goes at $4.30.

NATIVE COPPER from Lake Superior. The globe, No. 33, was filled with selected specimens in acid, but old zero broke the globe and we can furnish the ragged thread-like specimens separately at 25 cts., 35 cts., 50 cts. and $1 each, prepaid.

HOT SPRING QUARTZ XTALS. Have a few left at 15c., 25c and 35c. each, prepaid; and one 6 lb., 5 x 9 in., clump xtal, with group-like base at $1 60.

RUBELLITE. I have a splendid assortment of specimens of this beautiful bright rose tourmaline, needle-like xtals, usually arranged so that dozens will radiate from a single center in a gangue of lavender Lepidolite and found in San Diego Co., Calif.: ½ lb. specimens, 30 cts.; 1 lb specimens, 55 cts.; 1½ to 2 lb. specimens, $1; 5 lb specimens, $2 50. I have one beautiful museum specimen, which measures 8 x 10 in. and weighs 14 lbs., at $5.40.



THE ABOVE ENGRAVING SHOWS ONE OF LATTIN'S

PAN-AMERICAN

NATURE STUDY COLLECTIONS

DISPLAYED IN A 4x4 FOOT SPACE.

This Collection will be Appreciated by EVERY STUDENT, TEACHER, COLLECTOR AND AMATEUR, and is of Special Value in Nature Study Work.

Lattin's Pan-American

NATURE STUDY COLLECTION.

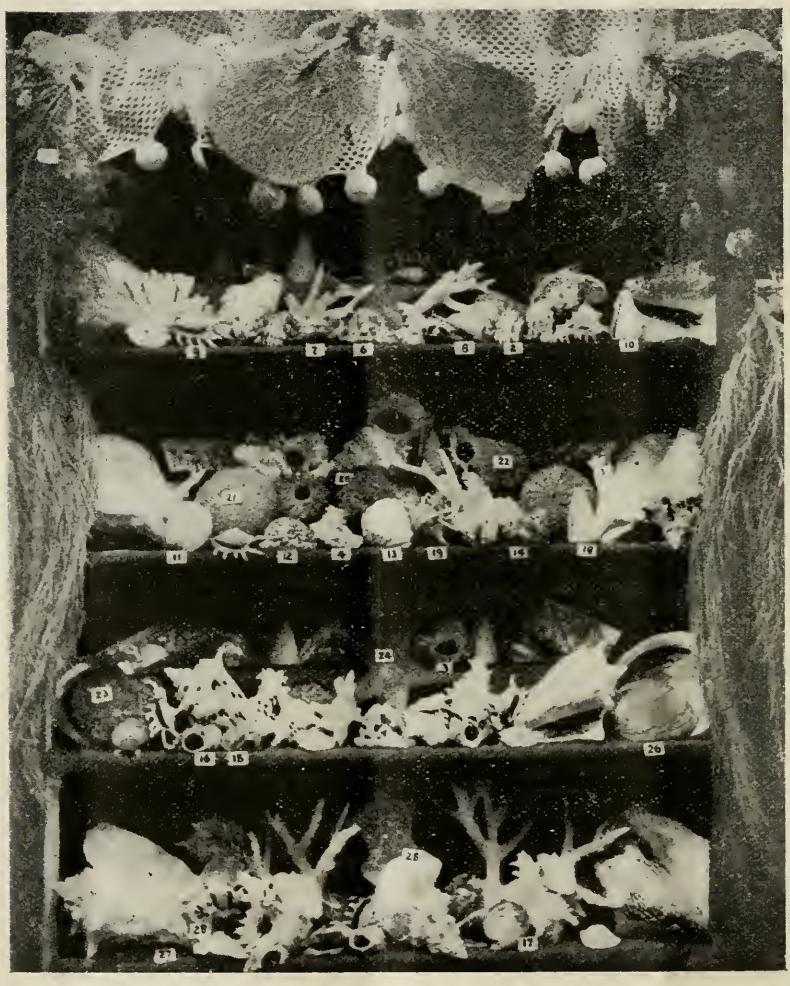
This Collection contains specimens selected with special care in order that the Collection, as a whole, would not only be of value to the Specimen Collector in building or adding to a cabinet, but have endeavored to make it practically indispensible in Nature Study Work, both to teacher and student.

As many may not wish to purchase the entire Collection, I quote the regular price on each specimen and also my *prepaid* Clearance Sale price.

The entire Collection at regular retail rates would cost $11; at my special *prepaid* rates if purchased separately 5.19.

I will deliver the *entire Collection* f. o. b., freight or express, Albion, N. Y., carefully and securely packed and boxed for **only $2.78.**

No.		Regular Price.	Lattin's Prepaid Price.
1	Pink Murex, *Murex bicolor*, Gulf Calif., 4in	$ 35	$ 21
2	Pearl Conch, *Strombus granulatus*, Panama, 2½in	15	06
3	Orange Scorpion, *Pterscera aurantia*, Philippines, 4in	15	06
4	Goldmouth, *Turbo chrysostomus*, Philippines, 2in	15	06
5	Chambered Nautilus, *Nautilus pompilius*, E. I., ½ of bisected shell to show structure, etc., 5in	75	48
6	Mushroom Coral, *Fungia elegans*, Gulf Calif., 2in	25	11
7	Armor Starfish, *Nidorella armata*, Panama, 5in	35	17
8	Black-mouth Tree Snail, *Oxystyla undata var floridensis*, Florida, 2in	35	09
9	Tiger Cowry, *Cypræa tigris*, Australia, 3in	15	11
10	Black Murex, *Murex radix*, Panama, 4in	35	16
11	Tarpon Scale, Florida, (2 spe) 2in	10	04
12a	Compass or Sunflower Starfish, *Heliaster Kubingii*, Chili, 4in	35	14
13	Mammoth Sea Urchin, *Strongylocentrotus franciscanus*, Pacific, 4in	35	21
14	Pink Coral, *Stylaster sanguineus*, Samoa, 2½in	25	13
15a	Orange Scorpion Shell. Cut to illustrate structure, 4½in., select	35	16
16	Silvermouth, *Turbo tesselatus*, Gulf Calif., 2¼in	25	07
17	Egg of Skate or Sand Shark, Martha's Vineyard, 4in	10	04
18	Organpipe Coral, *Tubipora musica*, Singapore, 3in	35	18
19	Fossil Polyp Coral, *Heliopbyllum*, Genessee Co., N. Y., 2in, (¼lb)	25	13
20	Purple-spined Sea Urchin, *Strongylocentrotus drobachiensis*, Gulf Mexico, 3½in	25	09
21	Horn Nut, China, 2¼in	10	04
22	Sea Horse, *Hippocampus hudsonius*, Delaware Bay, 4in	35	11
23	Screw Shell, *Turritella croc a*, Panama, 3in	15	06
24	Native Lodestone, Magnet Cove, Ark., 2in	25	09
25	Resurrection Plant, Mexico	15	06
26	Young Conch, *Strombus gigas*, Bahamas, 5in	25	13
27	Propellor Coral, *Agaricea agaricites*, Bahamas, 5in	35	22
28	Coquina Shell Conglomerate, St. Augustine, Fla., 3in	25	09
29a	Fossil Scaphites, (Nautilus Family) Custer Co., Montana, 2in	35	11
30	Venus Clam, *Chione gnidia*, Gulf Calif., 3in	25	11
31	Lettered Cone, *Conus literatus*, Ceylon, 3in	35	19
32	Golden Starfish, *Asterias ochracea*, Calif., 7in	35	19
33	Black Ear, *Haliotis cracherodii* Japan, 3½in	25	08
34	White Murex, *Murex ramosus*, Zanzibar, 4½in	25	14
35	"Electric Stone," "Hell Fire Rock," a variety of Tremolite so highly charged with phosphoric acid that a light scratch in dark emits a play of lights, 3in	25	09
36	Branch Coral, *Madrepora cervicornis*, Bahamas, 7in. Branch	25	16
37	Sea Fern, *Pterogorgia setosa*, Key West, 3ft	50	21
38	Golden Sea Fan, Panama, 15in	35	21
39	Yellow Sea Fan, *Rhipidogorgia occatoria*, Bahamas, 12in	25	14
40	Sertularia, Atlantic City, N. J.	15	06



THE ABOVE ILLUSTRATION SHOWS ONE OF LATTIN'S

TWENTIETH CENTURY

....BARRELS OF SHELLS

CROWDED INTO A 4X5 FOOT SPACE.

TO PROPERLY DISPLAY WOULD REQUIRE A MUCH LARGER SPACE.

Our Twentieth Century

Barrel of Shells

In my list offering a "Barrel of Shells" six years ago ('95) I quote:

"From time memorial it has been customary for shell dealers to put up a barrel of shells for others to sell again. $25 or $30 is a favorite price for one of these barrel collections, in fact a *good selection* of *saleable* material cannot be sold at a living profit at a lower price. 'Lattin' has been in the shell business for the past fifteen years. '95 makes his 9th consecutive season at Chautauqua (where he has *exclusive* right). His 'Fair' trade is and has been one of the heaviest in the U. S., and at the WORLD'S FAIR 'LATTIN' *personally* sold *more* shells *than all other dealers combined*—these statements may seem strong but they are *facts* nevertheless." At that time I offered a "barrel of shells" to dealers only.

The "Twentieth Century Barrel of Shells" has been put up from an entirely different standpoint; and while I expect to sell more barrels to dealers than to others it will be due to the fact that they realize more fully the exceptional bargain I am offering in giving a greater variety and making a lower rate than they were ever able to previously secure.

I have about 25 of these Twentieth Century Barrel of Shells. The engraving on preceding page does not do the collection justice. It was my original intention to have the different specimens numbered in order that one could get an idea of each variety from the engraving but I find that the reduction in size is so great that the carrying out of my original intention is out of the question.

This "barrel" has been arranged, however, so as to be of value to anyone, and especially so for those wishing to get a nice assortment of shells, etc., and be able to sell enough from the residue to make their own cost little or nothing. This assortment is of value to the collector or teacher and of special value for school work. It's needless to add or say more as to its value to the dealer or to those who wish a selection to sell again. I might call attention, however, to its great value, if properly displayed, as a store window attraction and for ornamental purposes. An up-to-date merchant can use it as an attraction for a few weeks and then sell at ½ usual prices and realize a good profit. It is also of special value to place on sale and as an attraction at a Church or Lodge Fair booth, etc., etc.

For whatever purpose you purchase this assortment you will find it one of the biggest investments in the shell line that you ever made for the money. You will also find that the assortment contains no "dead wood."

Each variety is plainly labeled and a good sized cardboard label is also sent for each variety, giving common and scientific names and locality, making the assortment doubly valuable for display purposes.

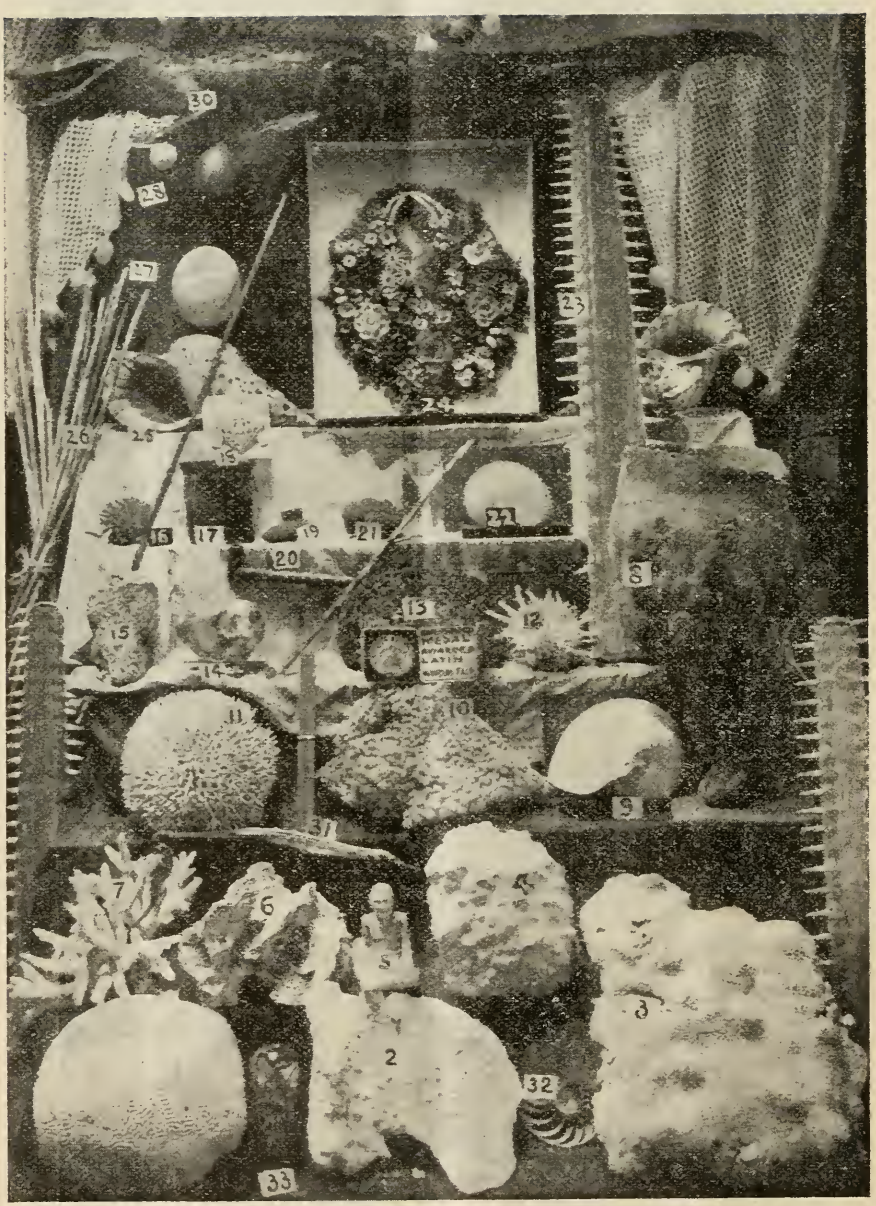
The assortment is made up as follows:

2 Large Pink Conchs	$ 75
2 Pink Conch Points	75
4 Young Conchs	50
1 E. I. Clam	50
2 E I Clams	50
4 White Murex	60
2 White Murex	50
3 Pink Murex	50
2 Pink Murex	75
2 Black Murex	50
1 Black Murex	50
1 Grandmother Shell	1 00
1 Grandmother Shell	35
1 Violet-mouth Scorpion	50
1 Orange Scorpion cut to show structure	35
1 Tent Olive	75
2 Green Snail	50
2 Tiger Cowry	35
1 Marlinspike	50
2 Mother of Pearl	50
4 Lettered Cones	1 00
2 White Spindle Shells	50
2 Venus Shells	50
5 Fighting Shells	50
5 Pearl Conchs	50
5 Silverlips	50
5 Goldmouths	50
5 Silvermouths	50
5 Orange Scorpions	50
5 Black Ears	50
5 Screw Shells	50
5 Banded Murex	50
5 Lettered Olives	50
4 Boxes of assorted Small Shells	1 00
1 Sea Horse	35
1 Armor Starfish	35
1 Golden Starfish	35
3 Compass Starfish	75
2 Mammoth Sea Urchins	50
Lot of assorted pieces W. I. White Branch Coral	2 00
Lot Organpipe Coral	1 00
2 Purple Sea Ferns	50
2 Purple Sea Ferns	1 50
2 Yellow Sea Fans	50
2 Yellow Sea Fans	25
2 Golden Sea Fans	75

This assortment of shells, etc., at low rates will sell for not less than $28.00. I will pack the entire lot in a barrel and deliver f. o. b. express or freight, Albion, N. Y., for only $7.80. It's worth nearly double this figure at low wholesale rates, and is the biggest bargain in showy material in the Shell and Coral line I have ever seen in my 20 years' career as a dealer and jobber in Sea Shells, etc.

Address plainly and in full,

FRANK H. LATTIN, M. D.,
Albion, N. Y.



THE ABOVE ENGRAVING ILLUSTRATES

A FEW SELECTED SPECIMENS

OFFERED ON FIRST PAGES OF THIS LIST.

with her household effects, if disturbed, I covered the eggs with my coat and hustled home after my camera and took them "in situ." Although I use the most rapid plates yet I had to make the exposure 8 seconds on account of the gathering gloom in the woods. The eggs were nearly hatched, but never did an oölogist use more time, patience and pancreatin, than did I, but with all my care I could only save one egg.

June 21.—How queer it is—a solemn fact though—that one is forever surprising himself by finding just what he is not looking for. Here I've found quite accidentally the nests of two species that I've searched for so many times without success. This fact was again illustrated on June 21 while photographing an Ovenbird on nest. I was out in the woods at 5 a. m., and when I arrived at the nest the Ovenbird was out to breakfast, so I took photo of nest and eggs "in situ." I had just finished when she came walking homeward with dainty, mincing steps, turning aside here and there for little bunches of grass or a dead limb. With camera obout six feet away she came peeking around the nest, her sparkling, beady eyes seeming to express anxiety, which did not pass away even when I requested her to "look pleasant."

While folding my camera I heard the "hum" of a Hummingbird, overhead in the oaks and I began to realize that a nest was near, for judging by the "hum" or "buzz" it sounded like a Hummingbird from the nest a foot or so, and darting back. A glance upward revealed the tiny bird humming around her home, on the crotch of a dead limb, about 5 feet from the body of a slender oak, and 30 feet above the ground. She seemed to be nervous because of my presence and kept turning her head sidewise, and peering at me over the rim of her little gem of lichens, spider's web and cottony stuff. There were two slightly incubated eggs and they now are in my collection.

There is another solemn fact that I always think of as a sort of "hoodoo" and that is to have some misfortune befall a new find. Either some "varmint" will destroy the nest before the set is complete, or else some self-inflicted accident will happen.

I well remember the first set of Chestnut-sided Warbler that I found. I had succeeded in safely packing 3 of the eggs and had the fourth egg between my "first thumb and second finger" when a mosquito lit on my thumb and aroused my feelings—even more than the offended Warblers—which caused me to raise my hand, let it fall down upon the mosquito, smashing him into "smithereens" and incidentally the egg.

C. F. STONE,
Branchport, N. Y.

Iowa Notes.

"Oh! what so rare as a day in June?" Sometimes we ornithologists think that the early spring when the birds begin to arrive from the sunny south, is just as pleasant a time of the year, for after the dreary months of our severe winters, we are glad to greet our feathered friends once more.

On the 13th of March I heard the first Bluebird of the season. While on my way to work in the morning I passed a small creek bordered on either side by willows, and from some where there came the unmistakable notes of our first spring arrival. A cold northwest wind was blowing at the time and snow and rain fell incessantly. The thermometer registered 36 degrees above zero all day.

About the middle of the forenoon on the same day I saw a small flock of Red-winged Blackbirds flying high in air toward the south. Evidently their northward journey was begun a little

too early, and they had discovered the fact in short order.

A flock of geese was seen flying northward at noon, but they became discouraged at the snow, rain and wind which they encountered and struck off to the east in a driving rain.

At one o'clock in the afternoon seven Bluebirds were seen near Cedar Lake. They were on the south side of a willow covered bluff. The wind still blew coldly from the northwest, and snow was falling at the time they were seen.

Sunday March 17th, I heard a Robin singing. There seems to be a scarcity of Robins this spring, this being the only one I have heard to date, (March 20th,) but their ranks are filled with a goodly number of Bluebirds. I am very glad to note the increase of Bluebirds. Last season I found a pair breeding in an old stump near my home, but this was the only nest found for several seasons.

Every ornithologist should have a camera. A good photograph of a bird, nest or eggs can tell more of the beauty of Nature than words can express or tongue can tell. The amateur "birdologist" will find the camera a great help in his study of bird life and bird-architecture.

A few days ago the writer hunted up his climbers, blow-pipes, egg-boxes, drills, etc., and after looking them over and cleaning them, put them away where they could be found at a moments notice. The time will soon come when they will be needed, and it is best to have them ready beforehand.

I heard a Meadow-lark on the 18th of this month (March.) These larks are quite common during the nesting season, and their presence at this time of the year is a sure sign that spring is at hand. Several Red-winged Blackbirds were serenading the sun in the early morning with their "kon-ker-ree." Song Sparrows also sang in the shrubbery along the lake shore.

The writer has a unique way of identifying birds for field nse. It is a small book with alternating blank and ruled leaves. The left page being blank, and the right ruled. When a strange bird is seen, a rough outline of it is made on the blank page and then colored with colored lead pencils. A description of the bird is written on the ruled page, and it is very useful in identifying the specimen at hand. With this book in your *panjamas*, a pair of opera glasses, and a good "key" with you, or at home, identification is made quite easy. Of course the exact colors cannot always be used, but they can be made near enough to serve the purpose.

GLEN M. HATHORN,
Cedar Rapids, Ia.

Loxgilla portoricensis.

I first met this bird in the hills back of Catana and Bayamon across the bay from San Juan during the spring and summer of '99. In a three months' sojourn in the Island of Vieques I did not observe it and do not think it occurs. At Aguadilla during the summer of 1900 I found it common and again at Mayaguez the succeeding autumn and winter. In the brush of the lower hillsides near San Juan Bay it seemed to evince no evidence of shyness or seclusion and was readily approached and taken, but around Aguachilla and Mayaguez I found the opposite to be the base.

A male skin now before me measurns six and one half inches in length. The color is a uniform blue-black with purplish reflections. A patch of Venetian red of light shade covers the crown extending to eyes and base of bill and continuing in two slight stripes three-eighths' inch down on neck. Another patch of same color and oval shape covers throat and upper breast, measuring one and five-eighths inches from base of lower mandibles. A third

patch of this same color covers under tail coverts.

The bill is rather short, though far less so than many of the Grosbeaks. The culmen measures five-eighths inch. The female is almost uniformly of an olive brown color with chestnut under tail coverts; the wing quills and tail feathers are dark brown, almost black, but edged with the same color brown as the rest of the plumage. The young of both sexes resemble the female.

The flight is slightly bounding with successive, strong, separate strokes. The song reminds one forcibly of an exaggerated edition of the Song Sparrow's and the alarm notes are sparrow-like. I have heard the song just before twilight when the resemblance to that of the Song Sparrow was quite striking. Their food is largely vegetable, but probably insects make up some part of it. In a hasty review of my note book I find record only of seeds and buds, but I am quite sure I have examined stomachs containing insect remains.

The female Grosbeak is much shyer than the male and I have never had a good opportunity of watching her ways. The male is often found feeding on the hillsides and among the bushes without one being able to find the least trace of a female near.

The nesting habits I know only by one nest found on June 15, 1900, in a narrow bushy pass between two hills near Aguadilla. It was built at an elevation of about 8 feet; placed in a clump of twigs against the body of a small tree. In appearance it was much like an enlarged edition of the nest of *Euthia bicolor*, being bell-shaped with entrance in the side. It was composed of weed and vine stems, dead leaves, and skeletons of leaves, and measured externally 7x3 inches in depth, the latter measurement being to lower edge of entrance, the former to top of dome, —and 6¼ inches in diameter. The inside dimensions were: Depth, 2 inches; diameter, 3 inches.

The eggs were three in number and I sent nest and eggs to the U. S. National Museum without taking measurements or description, so must describe from memory. They were fresh and I should say about the size of the Cardinals', of a light blue ground, and quite evenly and thickly sprinkled with fine dots of reddish brown.

On June 13, 1900, I secured near this same spot a young female in immature plumage. Stomach's contents were small round weed seeds.

B. S. Bowdish.

Pan-American Notes.

If you don't know just where to go next summer you can't make any mistake in going to the Pan-American Exposition.

The superb collections made in the far northwest by the Alaska Geographical Society will possibly be shown at the Pan-American Exposition.

The best mineral exhibit ever made by Canada will be seen at the Pan-American Exposition. Mine owners and prospectors are giving the Bureau of Mines hearty co-operation in their collection of specimens for this display.

The Bird Protective Association of America proposes to make an exhibit at the Pan-American Exposition which will be of great interest and general value to all agriculturists, particularly those interested in the forest and shade trees. The exhibit will consist of infected sections of various kinds of trees on which will be mounted the destroying insects in their various stages of development, and the birds that devour them.

The bird and insect life will be represented in a natural way, thereby illustrating the great value of bird life to all forms of vegetation. It will be the first exhibit of this nature ever made at an exposition, and it is intended to make it a most useful feature of the Pan-American.

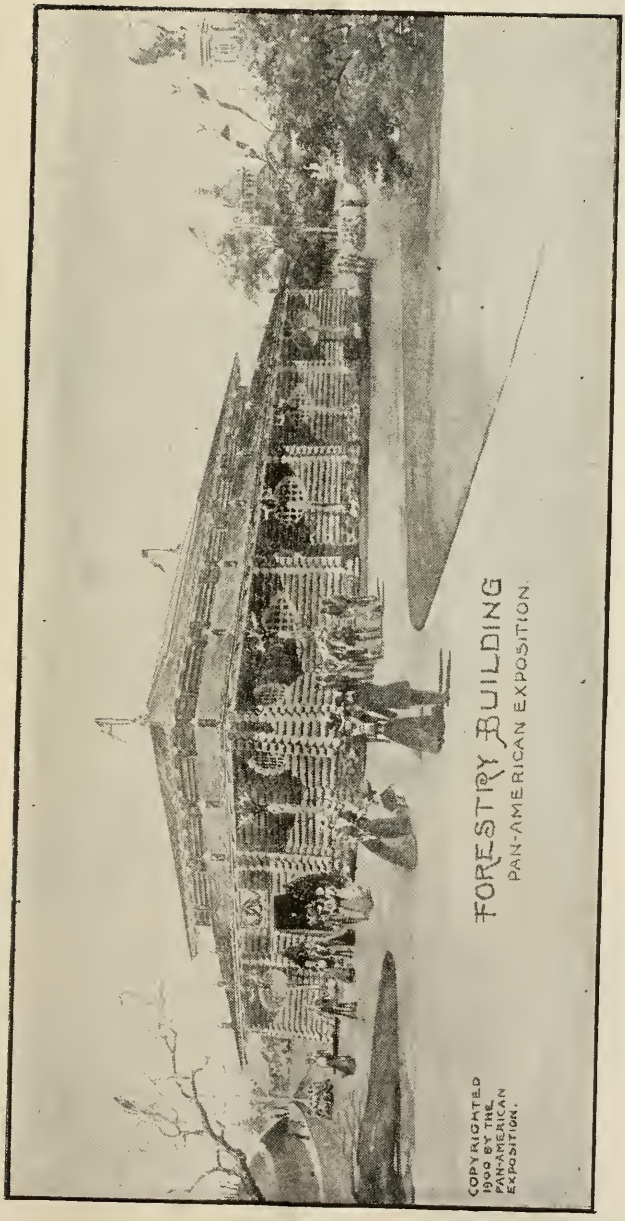
There are 5,000,000 or more persons in the United States who devote more or less of their time to the collection of stamps, coins, pictures, curios, etc., and the majority of them are members of the societies of collectors. Among these are: The American Society of Curio Collectors, the Philatelic Sons of America, the American Philatelic Association, the American Numismatist Association, the American Camera Club Exchange and the Illustrated or Souvenir Card Exchange. These and many other associations of collectors will hold their annual meetings in Buffalo during the week beginning August 19th, while the Pan-American is in progress.

On account of the many attractions offered by the Exposition and Niagara Falls, and the extraordinary opportunities which the collectors will have for adding to their specimens, it is expected that this will be the most largely attended meeting of the different associations ever held.

When the Pan-American Exposition opens its gates at Buffalo, May 1, 1901, twenty-five years will have elapsed since the Centennial at Philadelphia. During all this time there has been nothing noteworthy of the kind in the east, and the new century may never see anything to rival or surpass the Pan-American in magnitude, richness, beauty and universal benefit. Its location, too, is one to assure a record-breaking attendance, for taking it as a center and drawing a circle with a radius of 500 miles, over 40,000,000 people —more than half the population of the United States—would be included in the area thus circumscribed, which would, moreover, include at least seventy-five per cent. of the nation's industrial and commercial wealth. As a center of railroads and waterways Buffalo is also at the front with the tonnage of the Greas Lakes pouring into its harbor, and twenty-six steel highways reaching out in every direction. In 1876, the year of the Centennial Exposition, the entire population of the United States scarcely equalled that now within the area indicated, and the same circle in diameter, with Chicago as its center, would not include over half that number. The resultant advantages, both to the Pan-American Exposition and its exhibitors and patrons, are self-evident.

A new booklet, just issued for the Exposition, tells a very charming story of its history and creation and describes the beautiful city in which the festival has been developed and brought to completion. The booklet is embellished with many illustrations, including twelve colored plates of Exposition buildings and views. These will be sent free to applicants by the Bureau of Publicity so long as the edition lasts. All the principal buildings of the Exposition have been completed for some time. The installation of exhibits began many weeks ago, and there is every reason to expect that the Exposition will have a sand-paper finish on the first of May—a remarkable achievement, indeed, considering the unfavorable weather and the history of other expositions in this regard. Some of the afterthoughts, such as State buildings, will not be done till about May 20th, which is to be Dedication Day.

Everyone who has visited the grounds of the Pan-American Exposition during the last few months has been astonished beyond expression upon beholding the magnitude and the exceptional beauty and novelty of the enterprise. It is very much larger than people generally have supposed, and it is apparent that the $10,000,000 which is the approximate cost of the Exposition as a whole, has been expended most wisely and with the happiest results. The particular novelty that is to be noted in this Exposition is discovered in the fact that in its exterior aspect it is a radical departure from former expositions. The buildings are arranged upon a harmonious and well developed plan, producing court settings and vistas of very charming character. The use of molded staff work and decorative sculpture upon the buildings and at all salient points within the courts, the liberal employment of hydraulic and fountain features, the floral and garden effects, the exquisite colorings of buildings and architectural ornaments, and the illumination of the whole with more than 300,000 electric lamps, combine to make a picture of unsurpassed loveliness. The musical features are also of great importance and interest. The exhibit divisions are very complete and embrace the gamut of industrial, scientific and artistic activities of the people of the Western Hemisphere. The Midway, claimed to be the greatest in the world, has more than a mile of frontage. The restaurant features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EXPOSITION.

are perfect and the Exposition, so far as human ingenuity and the wise expenditure of money can accomplish such a work, is complete to the last detail.

Buffalo, too, is an ideal city for an exposition, having a summer climate that is tempered by the breezes from Lake Erie and, therefore, the most comfortable in which one may enjoy his summer outing. The people of the city have prepared themselves in a most ample way to entertain millions of guests during the Exposition. The private dwellings throughout the city have been thrown open to the public and, in view of the ample accommodations, very moderate rates will prevail so that every visitor may have such accommodations as he is willing to pay for. He may have the palatial quarters of the fine hotels, or the quiet restfullness of a pleasant home. The average rate for accommodations near the Exposition grounds is about $1.00 per night for lodging, with 25c to 50c added for breakfast, it being expected that guests will take their other meals upon the Exposition grounds. A number of responsible companies have organized to find accommodations for visitors at any price they may desire to pay. The officers of these companies are centrally located and this system of management promises to bring very satisfactory results to all concerned.

THIS PAPER is printed at the Book and Magazine Publishing House of A. M. EDDY, Albion, N. Y.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 6. ALBION, N. Y., JUNE, 1901. WHOLE NO. 177

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No.177 your subscription expires with this issue
180 " " " " Sept., "
183 " " " " Dec., "
190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This June OOLOGIST was issued June 8th. The July issue will be printed on June 25. Copy intended for that issue must be forwarded by return mail.

NOTICE:—I will exchange 100 Datas, size 6½x3½, printed on Diana Bond paper, for every 50 cts. worth of strictly first class sets with complete data sent me. Sets returned if not entirely satisfactory. CLARENCE H. LUTHER, Fayetteville, Ark., P. O. Box 322.

WANTED:—Hummingbirds' nests with eggs in exchange for specimens or supplies. J. P. BABBITT, Taunton, Mass.

FOR SALE:—One set of Raven eggs with nest at catalogue rates. ALVAH G. DORR, Taxidermist and Fur Dealer, Bucksport, Me.

FOR SALE or EXCHANGE: Sets of 378 4-8, 5-9, postpaid, for 4c per egg, or will exchange for Tobacco Tags, 10 tags for each egg. Get special price for 25 sets of 378, 1901 collecting. Address F. W. COLLINS, Garden City, Kan.

TYPE:—I have about 15 fonts of display type and ornaments taken from a printer in payment of a bill. I will exchange for eggs or skins. Proofs on application. JAMES P. BABBITT, Taunton, Mass.

TO EXCHANGE:—50 feet of seine (new) and good 22 cal. rifle for "Coues' Key," "N. A. Birds" or Davie's "Nests and Eggs." Good novels for eggs or either of above books. Write for exchange list. ROY E. GASTON, Hiawatha, Kan.

FOR SALE:—Large Rocky Mountain sheep head, measuring 16½ inches around base of horn, 35 inches around outside curve, 22 inches spread. Finely mounted. Price $50.00. A rare bargain. Male deer heads, all elegantly mounted. One large 12 point $15.00; one large 13 point $15.00; one 10 point $12.00; one 4 point $10.00. Every one a bargain at above prices. Enclose stamp for reply. L. B. GILMORE, Blooming Valley, Crawford Co., Pa.

FOR SALE!—A new No. 2 Eureka Camera (Eastman make) pictures 3½x3½, three (3) double plate holders and 1 dozen plates, all postpaid for $5.00. Also a No. 1 Vive (almost new) holds 12 plates 4¼x4¼ postpaid for $3.00, cost $6.00. F. W. COLLINS, Garden City, Kan., Box 431.

OOLOGISTS!—I have a fine lot of strictly first class sets and singles for sale at 80 per cent. discount. Don't miss this chance if you care to purchase eggs cheaper than cheap. Send for list. ED KASCH, Lockhart, Tex.

FOR SALE:—The following first class singles for sale very cheap: 289b, 2c; 316, 2c; 325, 15c; 326, 15c; 385, 5c; 387, 2c; 394a, 10c; 406, 2c; 443, 2c; 452, 3c; 454, 5c; 506, 2c; 507, 2c; 511, 2c; 511b, 2c; 512, 3c; 513, 3c; 552, 2c; 593, 2c; 594, 10c; 601, 2c; 604, 2c; 611, 2c; 627, 2c; 633, 2c; 703, 2c; 719b, 5c; 735a, 10c; 766, 2c; Orders of less than 50cts. not desired. Send before they are all gone. ADOLF SCHUTZE, 1611 Sabine St., Austin, Travis Co., Tex.

LOOK! LOOK!—The following first class sets with data for sale: 316 1-2, 3c; 443 1-5, 10c; 506 1-5, 6c; 552 1-4, 5c; 593 1-4, 5c; 594 1-4, 40c; 633 1-4, 10c; 703 1-4, 1-5, 5c. The above prices are per set postpaid, but orders for less than 50cts. not desired. ADOLF SCHUTZE, 1611 Sabine St., Austin, Travis Co., Tex.

CAMERA and EGGS for EXCHANGE:—I offer nicely prepared, authentic sets of the following in exchange for sets I can use: 79a 1-1, 93 1-1, 107 1-1, 116 1-1, 286.1 1-1, 288 1-4, 1-5, 408 1-8, 449 1-4, 498b 1-4, 1-5, 520 n-4, 611.1 1-4 to 6, 708 1-3. Also a 6x8 "Waterbury" view camera, made by the Scoville & Adams Co., with shutter, 3 double plate holders, carrying case and tripod, all in good working order. In sending lists of duplicates please mention number of each species you have to offer. JAMES P. BABBITT, Taunton, Mass.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

WANTED.—May number, 1888, Vol. XXII, American Naturalist WILLIAM BREWSTER, Cambridge, Mass.

FOR SALE:—Fancy and common Geodes, ranging in price from 25c. to $5.00; halfs from 10c to 50c. Special rates to colleges and museums. H. K. McLELLAN, Hamilton, Hancock Co., Illinois. 179

OOLOGISTS WANTED:—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

WANTED:—A1 sets Nos. 83, 172, 192, 193, 206, 210, 228, 258a, 261, 286, 301, 302, 310 478, 486, 618, 701 Can offer good sets, Belgian Hares, Abyssinian and English Cavies, Fancy Pigeons and Pit Games. ALMON E. KIBBE, Mayville, N. Y. 177

WANTED:—Oologists and others to read "Frederick Young," the prettiest book of the year. A fine story with science and natural history intermixed. Tinted illustrations; gold top. Price $1.50. Superlative as a gift. Order through your book dealer. By Charles Lincoln Phillips, an old contributor to this journal. H. A. DICKERMAN & SON, Publishers, Boston. tf

CASH PAID for bird, animal, nest and egg photos of specimens in situ or mounted. Must be free from copyright or other limitations, so that I can use them in my journalistic work. Write me soon and state lowest cash or exchange price. Unmounted photos preferred. H. H. DUNN, Fullerton, California.

PUBLICATIONS WANTED:—Complete volumes or single copies of the Osprey, Western Ornithologist, Bulletin Cooper Ornithological Club, Auk, O. and O, American Osprey, Condor, Iowa Ornithologist, Nidologist, Feather, Hummer, OOLOGIST and others. I have A No. 1 sets with data magazines, stamps and cash to faciliate exchange. Everything answered. GLEN M. HATHORN, 1600 E. Ave., Cedar Rapids, Ia.

FOR SALE or EXCHANGE:—Complete file (4 volumes) Osprey, except Sept. 1899 No, $5.00; 1 copy Nov. '97, ditto Jan. '98, the two 25 cents; Volumes 2, 3 and 4 Nidologist, $3 00: 1 copy each Sept. '94, May, Sept., Oct., Dec. 1895, the five 30 cents; Museum Vol. 2 complete, 75c: Bulletin Mich. O. Club Vol. 2 complete, Vol. 3 Nos. 1 and 2, Vol. 1 No. 2, the lot 75 cents; Natural Science News, complete file, 60 cents. Prepaid at above prices. Will exchange any of the above, value for value, for set 30-30 short range reloading tools; a 3 or 4 slide tripod for 4x5 hand camera; a Stevens Diamond Model pistol, 22 calibre, 10 inch barrel; or a Bristol steel, jointed fly fishing rod for bass or trout. L. B. GILMORE, Blooming Valley, Crawford Co., Pa.

NOTICE!—Mounted Fish for sale:

Leopard Shark, 18 inches	$1 00
Bullfish, 22 inches	1 00
Rock Sturgeon, 16 inches	1 00

Send stamp for photograph. EDWIN H. REIBER, No. 160 Champlain street, Rochester, N. Y.

WANTED:—Sets of 58, 64, 76, 137, 139, 261, 273, 337, 339, 373, 387, 388, 390, 393, 394, 501, 611, 614 and others, especially 218, 230, 334, 364. Exchange or cash. All answered. A. E. PRICE, Grant Park, Ills. 177

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THE OÖLOGIST.

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THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

"A Handsome Little Owl."

Along the city street I wended my way to the high school building, having my eye open as usual for things ornithological and oölogical. I was passing the quarter-block occupied from time immemorial by Martin Tighe's truck patch, an infallible guide to the precocity or tardiness of the egging season, for when I saw Martin lining off the patch for his rows of early potatoes, I knew certainly that two handsome eggs were waiting my gathering in the nest in the big cottonwood overhanging the creek. On this particular morning a most unexpected event occurred. Now I pride myself on my acquaintance with every spot in my parish that is likely to yield any oölogical products; but there right before my eyes, in one of the ancient fenceposts, not more than three feet from the ground, was a small opening suggestive of a nest cozily ensconced in the bottom of a cavity. Strange that I had never seen that hole before. Wondering how that promising cavity had thus eluded my gaze while passing the spot four times a day for several years, I rapped smartly below the opening, while all sorts os oölogical anticipations fluttered through my mind.

Wonder of wonders! Out popped a tiny specimen of the Owl kind, a handsome little owl, which fluttered aimlessly for a moment about my head, and then perched upon the fence, scarcely beyond the length of my arm. My heart almost stopped beating in my excited bosom, for I could readily see that it was one of those little Elf Owls, or a Pygmy Owl,—ah yes, it was indeed a Pygmy Spotted Owl, no larger than a *Passer domesticus*, with beautiful white plumage mixed with longitudinal spots of grayish white. I give all these details because some collectors are so critically anxious about accurate identification.

As I peered anxiously into the cavity, which seemed much larger and rounder than I fancied would he connected with the neat circular entrance, I saw that there were eggs lying in the bottom of the hollow. Was I indeed about to secure a full set of eggs of this rare species, about which I had read with covetous eagerness in the "Manual" and which the books declared was only a casual straggler in California and Arizona? One, two,—tears almost blinded my eyes as I realized that the two, pearly white, small sub-spherical eggs were an incomplete set. Why had fate been so cruel to me, when other collectors were always getting sets of six and even seven? (I once heard of a set of eight.) What should I do? It would never do to leave this desideratum in the exposed site, with hundreds of children passing several times daily; but to take an incomplete set of so rare a species would be to depreciate their value, and would leave a train of regrets which would tinge all my future days with sadness whenever I looked over my oölogical treasures.

Something must be done, and done quickly, for a group of children are coming, and my actions would draw their attention to the very thing I wanted them not to know. While rapidly considering whether to take the incomplete set and blame fortune for the results, or to take the chances upon the nest's being overlooked by the children, even as I had overlooked it for years, keeping my eyes glued upon the immaculate treasures in the brightening cavity, I was surprised by the handsome little Owl's fluttering down and striking me plump in the small of the back,—why, 'tis nothing but the baby planting his foot abruptly against my spinal column, and I awake to find that Saturday morning has arrived, bringing a fine clear day for a tramp after products of *Bubo virginianus subarcticus*.

Well, though no little Spotted Owl, nor Elf Owl, or other desideratum so valuable, allure me afield, I'm off for a cruise to a grove five miles away. On the preceding Monday evening, while mousing around a haw thicket surrounding two large cottonwoods, I had detected an indistinct form aperch upon a low limb near the trunk of one of the cottonwoods. Though I was seventy-five rods away, as I circled the thicket there remained the same distance between the two prominences surmounting the upper corners of the crouching form, and I became aware that I was being watched with the jealous eyes of Master *B. v. subarcticus*. So starting out about Saturday noon, I made my way to the thicket. No Bubo was about the place. However I made a thorough search through the grove, inspecting every old nest of Crow, Hawk and even Magpie. I had not expected to find the Owls nesting there, though, for I had frequently inspected the thicket and knew about what it offered. Continuing my way I faced a cutting dash of snow pellets for nearly two miles, until I reached a grove of cottonwoods where I suspected the Bubos were located for their second attempt at nidification. This was on April 13th; I had despoiled the same pair of three eggs on March 16th.

Before I entered the grove, I was informed that the Bubos were there domiciled and astir by a small colony of Crows which inhabited the place. Sure enough, I had scarcely stepped among the bare trees when I flushed the male Owl, and sent him flapping away at the head of a dozen deriding Crows. It happened that he alighted near the femaie, who immediately took wing, drawing after her the parcel of Crows. The male thereafter remained upon this perch, giving utterance occasionally to a deep-voiced but subdued hooting. As the female was thus abroad, it was necessary for me to

climb to each suspected nest, not knowing the precise site; and guided by my experience with Bubo in Illinois, where sycamores grow tall and Bubos nest high, I ascended to several that were conspicuously high. At length, having examined all the likely sites, I concluded that the occupied nest must be an insignificant affair in the top of a slender tree. Pushing through the thicket to reach the tree, I discovered a large, lean-to nest against the trunk of a small tree, the distance of the structure from the ground being only ten feet. Think of that, Dr. Strode, only ten feet. Little thinking that *B. v. subarcticus* was living so far beneath his privilege, I scrambled up the trunk from sheer force of habit, and ah, there were two eggs, generously blotched with blood as though produced through sore affliction, lying lonesomely in a cavity ten inches across and two inches deep. Incubation advanced to blood and matter, as I wrote in the data. And thus my Owl dream partially came true.

P. M. SILLOWAY,
Lewistown, Montana.

The Turkey Vulture.

Cathartes Aura.

Throughout southern California, from the booming surf of the hoary old Pacific to the snow capped summits of the Sierras, the Turkey Vulture, or "Buzzard" as he is commonly called, is by far the most abundant raptorial bird. Hawks, mostly of the Red-tailed and Red-billed varieties are common residents of certain limited districts but these vultures are well nigh universal, in fact, so plentiful are they that one who has lived in this Golden state for any length of time, notes their absence from landscape to a greater degree than he does their presence in it.

In spring and early summer the big dark colored fellows are found most abundantly back in the higher hills but as soon as the young are fully fledged, they begin to scatter out over the lowlands where the food their manner of life demands is more easily obtainable than along the sterile hillsides. This family exodus takes place about the end of August, but the huge California Condors, who occasionally frequent the same hills with their lesser relatives, do not join in this local migration, preferring to take their chances in their native hills. These huge scavengers, however, do not nest with us, if so my knowledge on the subject is at present quite limited, as the Turkey Vulture do.

In this immediate vicinity, and, I may say, throughout the northern part of this county (Orange), their eggs may be looked for from April 1st to May 1st. Before this date sets are seldom complete and afterwards my experience has been that most eggs are "past redemption" even by such all powerful means as caustic potash. I admit, on the other hand, that full sets of the eggs of this vulture have been found near here earlier than April 1st, and on the 10th day of March of this year while out on the trail of a pair of Pacific Horned Owls, I found two fuzzy young "buzzards" under a shelving ledge of rock on a barren hillside, and I have read of fresh sets which have been taken a few miles southeast of this place during the last ten days of May.

Notwithstanding the many floating rumors which have come to me of "buzzards" that built huge nests in trees. I have never yet succeeded in finding the Turkey Vulture nesting anywhere save in the ground, and then always in little caves, never "among the brush on a sidehill" as I have read of other collector's doing. Nor do they nest in hollow trees, a trait common to them in Texas and other Gulf states. This is not from any lack of dead trees for every fool camper who passes through our canyons must of

necessity build his fire beneath the overhanging trunk or the spreading roots of some giant sycamore or oak, so as to leave some mark of his vandalism on a creation far beyond his infinitesimal ability to replace.

I have now in my collection several sets of this species taken in Texas, New Mexico, Arizona and other southwestern states as well as eight sets of my own collecting; further I have sets from states east of the Mississippi also, and it is worthy of note that all the western and southwestern collected eggs are much larger, more clearly shell marked and more brilliant in their outer markings than are those from the eastern states. The set represented in photo herewith averages fully .25 inch longer than the average of four sets from east of the Father of waters.

As may be seen from the illustration this is a well marked set, yet I have seen many, and taken three or four which were more strongly marked even than these. They were taken April 12, 1900, from a hole, two by three feet, in a rocky ledge on a steep sidehill. No difficulty was experienced in walking directly to the nest. In fact I have not noticed that they try to conceal their nests or to place them in inaccessible positions

This year on April 5th I took another set from the same locality and only a few feet from the old hole, so I suppose it was from the same pair of birds. The markings persist in size and position, while the four eggs could not be separated by the calipers alone. No attempt at nest building is ever made and the nest smells worse than the Red-tails' I mentioned in the May OÖLOGIST.

I have never seen any egg which surpasses the egg of the Turkey Vulture in beauty unless perhaps it be that the Emeu, one egg of which I obtained from the Publisher of the OÖLOGIST not long ago.

HARRY H. DUNN,
Fullerton, California.

A Consideration.

In reading many of the articles in current periodicals, a question must be forced upon the minds of all true bird-lovers. By bird-lovers I do not mean to include those who simply see in birds charming objects awakening a coveting desire for personal possession, but those who recognize in these "feathered gems" fellow creatures having right to existence, and the power to enjoy same, entitled to respect and possessing traits of character worthy of earnest and forbearing study. The question which is suggested to such students is how many persons in the United States, collect birds their nests and eggs, one or all, of these how many are there whose work in this line actually adds to the sum total of human knowledge, and of those who do so add what percentage of their collecting work continues to a desirable end. In short what percentage of all such collecting throughout the country. actually yields commendable results and what percentage contributes to untold evil?

These are considerations which effect not alone the mere "collector," but also at least nine-tenths of those persons who are posing as sincere students, and perhaps conscientiously believe in the value of their work.

It is not my purpose here to enter into that much discussed question of what limits in collecting, the cause of advancement of knowledge justifies. "Who shall decide when doctors disagree?" And that they do so disagree on this subject, the columns of the publications on ornithology amply testify. It has simply occured to me as a consideration, why should not those who are conscientious in the matter ask themselves in sincere impartial honesty, what the character of their work, their ability for it, and its results justify?

When students whose conscientiousness it would be unjust to lightly question, indulge in repeatedly collecting not first alone, but second and third layings of birds whose economic value is now becoming known throughout the realms of agriculture as well as ornithology, and birds and their nests and eggs are amassed in large series, by an ever increasingly large number throughout the country, aside from the question of consideration of the rights of these weaker fellow creatures, aside from consideration of the marked decreasing of numbers of objects of beauty and interest, adding immeasurably to the power of enjoyment of nature, and contributing a fertile subject for legitimate, harmless, and profitable study, there is furnished to the great mass of the people as just cause for complaint from an economic standpoint and not alone is the study of ornithology impaired by the loss of subjects but its cause is injured irreparably in the mind of thousands of people who held the pleasure of daily observation of the birds as tiny friends, vastly above all the accumulated scientific knowledge of the past.

If a competent student can look at an amassed series of a hundred specimens of some species of a bird, or of a thousand eggs, and can conscientiously feel that the results to true and valuable knowledge has justified this terribly serious sacrifice, it is my belief that he is above reproach. But if he has *one such specimen* in his collection which has yielded nothing to knowledge, whose sacrifice of life has been in vain, then it appears to me that a careful consideration of the fact must give him regret, keen and sincere in proportion as his motives are honest and conscientious.

When we review the enormous number of specimens in the private collections of the country, if we were able to trace all the results they have yielded in the way of increase of knowledge, should we find the sacrifice justified? And this does not touch the matter of the millions of specimens gone to early destruction with never a to contribute to anything, through the misguided efforts of over-zealous collectors whose ability to obtain, entirely replaced any ability to abstract facts.

It seems to me then that when one is inclined to turn to the pursuit of this study he should earnestly, thoughtfully ask himself the question what his possible ability justifies in the matter of collecting.

If such a student would discipline himself, first by an apprenticeship in observing and accumulating facts without the destroying of life and the enjoyment of it, would not many fall by the wayside, and would not the gain be vastly greater and the sacrifice greatly less?. If a man has served such an apprenticeship, studying birds by means of camera, opera glasses and the many means whereby their lives are not destroyed, there has come to him opportunity for the acquirement of more facts and original knowledge than many imagine, and is not that man better fitted thereby to enter into the serious part which deals with those lives that the true bird lover will reverence second only to human life and will not lightly sacrifice to the passing desire of the moment or to a mistaken idea of need.

Finally, when a man has fully determined that he is justified in the pursuit of that high branch of the study which occasionally requires the sacrifice of life or happiness, he should use the utmost care to assure himself that his methods are such as to guard against *waste*. When one reads of men taking eggs from the nest when far advanced in incubation and then failing to save them with a weak excuse that they are gone beyond all hope he loses all patience. I have taken a set of Red-

shouldered Hawk in which the young had already pipped the shell, and blown them as fairly first class specimens, by the careful use of caustic potash and *patience*. I took a set of Scarlet Tanager in which the young had feathers formed and injecting caustic potash and occasionally shaking, the contents in three days became transparent, and save for the feathers blew out, thin, almost as water. I have also saved sets of both large and small eggs in first class condition by allowing them to stand a day or two with water in, in the absence of caustic potash.

I wish I might have an expression of opinion on this consideration from my fellow students, not a hasty, biased or prejudiced one, but the result of careful, honest consideration from all its aspects.

Particularly I would like to see expressed the views of those students whose work extends over sufficient time to give them the guidance of experience.

B. S. Bowdish,
Mayaguez, Porto Rico.

May 18, 1901.

Pan-American Notes.

On and after June 1st, as time and "patients" will permit, ye Editor intends to take an occasional day off and do the Pan-American—all exhibits and portions of exhibits containing anything of special interest to the readers of the Oölogist in the specimen and curio line will be carefully noted, in order that the many who visit the Exposition with a limited amount of time at their disposal, will surely see all pertaining to their favorite hobby.

For the past five years we have spent the bulk of our time in Buffalo and are fairly well acquainted with the Pan-American city and its accommodations. We have many personal friends and acquaintances, who are taking roomers and boarders during the season and in case any of the Oölogist readers intend visiting the Exposition and have no biding place in view, we will gladly turn them over to the tender mercies of a friend. Write exactly what you want and how long you intend to stay etc.

The following regarding the wonderful exhibit of the Smithonian Institution and the National Museum at the Pan-American Exposition, is rehashed from an interview with Dr. Frederick W. True, chief curator of the Bureau of Biology of the Smithsonian Institution and Government Commissioner of the Institution to the Pan-American:

The display is the finest ever made by the Institution and the National Museum, not excepting Chicago. While the quantity of the exhibit at the Pan-American may not exceed that of Chicago, the quality will far excel it.

It forms one of the largest exhibits in the Government Building. Every bureau of the Institution is represented, but, as is naturally to be expected, the National Museum makes the most extensive display.

The Institution has several exhibit illustrations of its history as well as some showing new developments in the work it also shows the will of James Smithson, the founder of the establishment, and copies of his scientific writings. Pictures of the chancellors and secretaries of the Institution is also shown, with views of the buildings, offices, the Hodgkins fund medals and publications, and, finally, a complete set of all the publications of the Institution and all its bureaus from the year 1846 to the present, comprising hundreds of volumes.

The National Zoological Park is represented by a large relief model showing all the natural features of the park and the animal houses, ponds, bridges and other matters of interest. This model has been worked out with great care and will show every important detail with exactness. The model will be supplemented by many interesting photographs of picturesque points in the park.

The exhibit of the National Museum consists almost entirely of new objects not shown at any previous exposition. The Pan-American idea runs through the entire exhibit, and very little that is not American will be shown. The plan has been to select large and striking objects and exhibit them singly,

rather than to show extensive series of small specimens. The exhibit is divided into three sections—zoology, geology and anthropology.

In zoology the museum has been fortunate in obtaining many rare and striking specimens for the exhibit, which is confined to American vertebrate animals. Among mammals should be mentioned the Kodiak bear of Alaska, the largest bear in the world; the singular little gray Glacier bear, which lives among the snow fields back of Mt. St. Elias; the giant moose, the wild black sheep of British Columbia, and Dall's sheep, which is entirely white; the rare West Indian seal, the musk ox, the mountain caribou, and others. All the larger species are mounted on bases with accessories indicating their natural surroundings and habits

The bird exhibit comprises about 300 of the most brilliant and striking forms in America, including many West Indian and South American species, such as the condor, the American ostrich, the macaws and parrots, umbrella bird, bell bird, cock-of-the-rock. The taxidermy of both birds and mammals is of a very high order.

Among reptiles the most striking exhibit is a gigantic snapping turtle from Texas, known as the alligator snapper. The creature is about five feet long, and is the largest fresh water turtle ever found in America. This part of the exhibit also includes the poisonous and non-poisonous American snakes—rattlesnakes, moccasins, boa constrictor, spreading adder, together with many striking lizards, frogs, toads, and salamanders, including species from Cuba and Porto Rico.

American fishes are fully represented. The museum has had agents at Key West, Florida, and on the Amazon River collecting specimens specially for the Buffalo exhibit. These have been prepared by a new method, by which their natural form and much of their brilliant color is preserved. A novelty in fishes is a large model of luminous deep-sea fish, arranged by means of electrical attachments so that it will phosphoresce, as it is known to do, when alive in the depths of the ocean. Many of the fishes from the deepest waters are exceedingly grotesque and wonderful in structure, but on account of their small size and their bad condition when dragged from the depths of the sea, they are little known to the public.

The geological exhibits are diversified and chiefly American. One very interesting series consists of examples of the various elements which occur uncombined in the rocks, such as gold, silver, copper, lead, mercury, platinum, carbon and iron. Strange as it may seem, one of the rarest of these elements is iron. The exhibit contains native iron from Greenland, and a portion of an iron meteorite from New Mexico. Another interesting object is a large platinum nugget worth about $200. Carbon is represented by a diamond crystal, a piece of graphite, and specimens of the curios and valuable black diamond. known as carbonade, a piece of which the size of half a pea is worth about $40.

A series of minerals includes every important variety, and no small number of very striking forms, largely from America.

Another especially interesting exhibit at this time is a series of the rocks of the Hawaiian islands, which, as is well known, are namely lavas The exhibit is accompanied by photographs of the interior of the craters of the volcanoes. An exhibit of concretionary structures found in mineral and rocks will include some magnificent slabs of the concretionary granite found in New England. Collections of deposits from the geysers and hot springs of Yellowstone Park are also shown.

Still another section of the geological exhibits is devoted to fossil vertebrate animals and fossil wood. Of the fossil animals, the one which will doubtless attract most attention is the skeleton of the gigantic mammal-like reptile known as Triceratops. This creature was larger than the largest elephant, and had an immense bony shield on the back of the head, as well as a pair of great horns over the eyes. Besides the skeleton, a large painting representing the animal as it must have appeared when alive, and a model is also shown.

Another extraordinary creature exhibited is a bird with teeth, known as Hesperornis. This remarkable bird was more than three feet high. The skeleton is practically complete Much attention will doubtless be attracted by the collection of fossil woods from Arizona, many of which are extremely brilliant in color.

Hardly less striking is the Zeuglodon, a whale-like carnivorous animal from Alabama, which reaches a length of 50

U. S. GOVERNMENT BUILDING.

or 60 feet. It is a strange combination of whale, sea-cow and sea-lion, and has long been a puzzle to zoologists.

An extensive display of American anthropology, prepared in co-operation with the Bureau of American Ethnology, completes the exhibits from the museum. The most prominent feature of this exhibit is large family groups, representing typical native American peoples, from the Patagonian to the Arctic Eskimo. Each group will serve to give an idea of the costumes, surroundings and mode of life of the people to which it relates. Close attention has been paid to every detail of the accessories and the modeling and painting of the human figures are of a high order.

The principal peoples represented are the Eskimo of the farthest north, the Canadian Algonquins, the Thlinkins of Southeastern Alaska, the basket-making digger Indians of California, the Zuni Pueblo Indians of Mexico, the Mayas of Yucatan, the Napo Indians of the Upper Amazon, and the Rhea-hunting Indians of Patagonia.

Surrounding the groups are many cases filled with collections representing the arts of the Indians, their household utensils, dress, weapons, etc. A series of models of habitation, the wigwam, the snow-house and pueblo is also shown.

The public will doubtless find a great deal to interest them in the collection of native baskets, which are shown. This series includes every type of aboriginal basket-making in the western hemisphere. There is many beautiful pieces, such as the Aleutian fine grass weaving, the pomo-coiled ware of California, and the diagonal weaving of the caribs of Guiana, the first Indians met by Columbus.

With the object in view of presenting a route of wholesome fun and instruction, some of the greater enterprises and chief Midway attractions at the Pan-American Exposition, have gone together in an organization called the Red Star Route, guaranteeing absolutely their entire offerings as wholesome and free from all objectionable features.

Naturally, the first visit will be made to the electric reproduction of the Burning Mountain of the Sandwich Isles—the Volcano of Kilauea, because of its nearness to the main entrance to the Midway. The spectator stands within an extinct crater of this perpetual fire mountain of Hawaii.

Next to the Volcano you visit the greater Hawaiian Village, where you will find the now world renowned Native Band of Hawaii, whose music, especially the Hawaiian national airs, are delightful, and the famous Hulu hulu dancing girls.

From all this fun, next, for the sake of patriotism, visit the great electric cyclorama, the Battle of Mission Ridge, an enormous reproduction of the great battle. Its management earnestly begs that the G. A. R. will make their commodious waiting rooms their general headquarters.

Moving along the vast Midway you are sure to be attracted by the quaint music of the Filipino Band. The Filipino Village is a big colony and contains representatives from nearly all the races inhabitating the islands. They range from cannibalism to the highest degree of civilization. Many of the women are extremely beautiful.

Near the Administration building you will find a handsome brick Venetian edifice, which contains the greatest wonder of all the Exposition—the Infant Incubators, from the London and Berlin Institutes, which has for its object the saving of the lives of poor little unfortunate babies who happen to have been prematurely born.

On the Midway, and immediately opposite the great Horticultural building, you will find the Herodian Palace, containing the sacred spectatorium, Jerusalem and the Crucifixion of Christ. Softly you tread with reverential step the grand staircase and look over the great scene. It is all sublimely realistic, and the most holy feelings of which the human heart is capable are aroused. This great work covers an area of canvas four hundred feet round by sixty feet high.

The price to each of these leading Midway attractions has been uniformly fixed at 25 cents.

Although ground was first broken for the Pan-American Exposition on the 25th day of September, 1899, it was not until June 4th of last year that the first timber was raised aloft as the beginning of the superstructure of the first building. Since that day a beautiful city of more than one hundred buildings has sprung into existence. The magic of 20th Century methods has wrought a wondrous work in the construction of this beautiful and costly Exposition, which on Wednesday, May

1, was formally opened for a six months' festival.

The completed exposition is a distinct triumph for every one concerned in the mammoth enterprise. It may be said to the credit of Buffalo that her citizens have furnished the money for it, receiving no Government aid. The entire amount appropriated by the Federal Government for the Exposition has been expended under the direction of the Government Board of Federal exhibits exclusively. The New York State appropriation has also been expended under the same conditions. The total cost of the Exposition, including the Government and State appropriations, the cost of the Midway and other buildings, is conservatively estimated at $10,000,000. The Exposition was first proposed by a number of citizens at the Cotton States Exposition at Atlanta, in 1895. Its official history, however, began in June, 1897, when a company for its development was organized by several prominent citizens and received the approval of the City, State and National governments. It was at first intended to hold the Exposition in 1899, but the Spanish-American War caused its postponement to the present year. The preliminary organization was superseded by a larger one with ample capital for the Exposition, and from the time of the reorganization the work has moved forward rapidly. This organization consisted of 25 directors, with the Hon. John G. Milburn as president, Edward Fleming secretary, George L. Williams, treasurer, and John N. Scatcherd as chairman of the Executive Committee.

The Hon. William I. Buchanan, at that time United States Minister to the Argentine Republic, was unanimously elected director-general, November 1, 1899. He had previously been the director of Agriculture, Live Stock and Forestry at the World's Columbian Exposition at Chicago. His ability as an organizer and director of a great enterprise was at once manifest, as the work of the Exposition has gone forward without apparent friction or delay. The original plan called for some twenty large exhibit buildings and to these many more have been added. The Exposition plot consists of 350 acres in the northern part of the city, accessible from every direction by electric cars, and having as favorable a steam railway service as could possibly have been chosen. The general architecture of the Exposition follows the Spanish Renaissance. The plan was worked out by a board of eight leading architects, representing several of the leading cities of the country.

The most comprehensive view of the Exposition is, perhaps, obtained from the Esplanade from a point a few rods north of the Triumphal Causeway. Here the visitor, with one sweep of the eye, may see nearly all of the principal buildings of the Exposition. The Triumphal Causeway, behind him, is a magnificent structure, designed by John M. Carrere, chairman of the Boatd of Architects. Four tall pylons are connected by swinging cables. The pylons are surmounted by four standard bearers, designed by Karl Bitter, the director of sculpture. The bridge, as a whole, is intended to express the pride of the American people in their achievements. The standard bearer represents a muscular youth upon a rearing horse. Below him are the trophies indicative of feudalism, slavery and tyrranical power, the whole expressing the triumphal struggle of the people of the Americas to free themselves from the institutions of despotic ages and governments. Terminating the buttresses of the piers are four groups of trophies typifying Peace and Power, modeled by Augustus Lukeman. In the niches on the side of the bridge are statues symbolical of Hospitality, Love of Truth, Patriotism, etc. On each side of the bridge are fountains of rearing horses and figures clustered about tall poles which carry huge silken flags. The fountain on the east typifies the Atlantic Ocean and that on the west the Pacific Ocean, with one base uniting the two. The sculptor of these is Philip Martiny. Beneath the bridge are subterranean grottos modeled after the famous Buttes de Chaumont.

Turning now to the eastern wing of the Esplanade the observer will note the group of three great government buildings, the open space being embellished with sunken gardens, fountains and statuary. At the left, marking the western boundary of the Esplanade, are the Horticulture, Mines and Graphic Arts buildings, this court being, also, decorated with statuary, fountains and flowers. Looking due north, the majestic Electric Tower rises to a height of 400 feet. This tower stands at the north end of the Court of Fountains and constitutes a very beautiful center-

piece. On the eastern side of the Court of Fountains are the Ethnology, Manufactures and Liberal Arts and Agriculture buildings. On the west side are the Temple of Music, Machinery and Transportation and Electricity buildings. Beyond the tower is the Plaza whose northern boundary is marked by the Propylaea, a very beautiful architechtural screen, rich in color decorations and ornamentation of statuary. East of the Plaza is the great Stadium, a mammoth buildiug, having a seating capacity for about 12,000 people. West of the Plaza is the entrance to the Midway, where one may spend days enjoying the multitude of novel entertainments.

The beauty of the picture is beyond the power of anyone adequately to describe, for no words can convey to the mind the glorious result of the combined efforts of the architects, the sculptor, the landscape gardener. the colorist and the electrician. They have all worked harmoniously to produce a set picture upon such a magnificent scale as to dazzle and delight every beholder.

Upon the pinnacle of the tower stands a graceful figure in gold called the Goddess of Light, presiding over the Exposition and looking abroad over its many beautiful features. In her upraised right hand she carries a torch while with her left she points to the beautiful scene below. The face of the tower is covered with myriads of electric lights. One does not realize its mammoth proportions until he looks at it from a near point of view. The main body of the tower is 50 feet square; with two wings, each 110 feet high extending from the east and southward and enclosing a semi-circular court. From its southern face gushes a cascade. at a height of 70 feet. At a height of 110 feet is a fine restaurant. Elevators will carry visitors to various heights in the tower.

The State and Foreign buildings are situated in the southwest part of the grounds. Nearly all the governments of the Western Hemisphere are represented, either in buildings of their own, or have creditable exhibits in the various exhibit divisions. Several of the States have very fine buildings of their own and all of the important states are represented by special exhibits in the Agriculture, Mines and other buildings. The Live Stock division occupies sevneteen pavillions, covering about 10 acres of land. A special building has been erected for a model dairy and a commodious building is used for dairy exhibits. The division of agricultural machinery occupies extensive exhibit space beneath the seats of the Stadium. Two special buildings have been erected in the southeast part of the grounds for a commercial ordinance exhibit. Between the two buildings is a model of a Gruson turret, 52 feet in diameter. This is so arranged that the visitor may go inside and note the construction of this form of sea-coast defense fortification. The exhibit of big guns by the United States Government is one of the very interesting features of the Exposition.

The arrangement of the various Exposition buildings is such that one may save a great deal of time, as well as effort, in seeing the exhibits. The arrangement is very compact and one may go from building to buildiug and enjoy himself thoroughly as he goes.

The Fine Arts building is about 1,000 feet south of the Government buildings and contains a fine collection of the best works of American artists. The forestry building is a near neighbor of the Government Buildiug, and a few rods to the east is a stockade of the Six Nations ofIndians whose ancesters dominated the territory of New York 400 years ago. This stockade contains all the various forms of buildings to be seen in an Indian Village prior to the settlement of New York. One of the pleasure trips within the Exposition grounds is the circumnavigation of the buildings upon a broad canal by means of launches which stop at convenient points. This canal, over a mile long, surrounds the main group of Exposition buildings. There are also wheeled chairs in abundance, having noiseless rubber tires and easy springs, so that one may be as lazy and comfortable as he desires. A miniature railway also skirts the Exposition fence and will be found convenient by many.

THIS PAPER is printed at the Book and Magazine Publishing House of A. M. EDDY, Albion, N. Y.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

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Wants, Exchanges, and For Sales.

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180 " " " " Sept., "
183 " " " " Dec., "
190 " " " " June, 1902
195 " " " " Dec. "

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This OOLOGIST was mailed July 24th.

WANTED.—A pair of young live of each of the following: Barn Owl, Long-eared Owl, Short-eared Owl For good strong specimens, large prices will be given. J. E. T., Box 98, Lancaster. Mass.

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EXCHANGE:—One Premo camera 4x5 with complete outfit to exchange for complete sets of eggs with full data. No others accepted. All letters answered. CHAS. S. MOODY, Oro Fino, Idaho.

FOR EXCHANGE.—Eggs of this state for sets of other states. Send list and receive mine. ED T. SCHENCK, Sprakers, N. Y.

FOR SALE or EXCHANGE.—Two hundred fifty perfect arrow and spear points. FRANK RACKETT, Grand Rapids, Mich. Rural Delivery No. 1.

OOLOGISTS.—Have some fine sets to exchange for same. Send your lists. Sets of hawks, owls and water birds especially desired. RAY F. STEVENS, Shabbona, Ill.

WANTED.—A cabinet for bird skins and back numbers of magazines. Can offer sets, skins, mounted birds, shells etc. or part cash, also have a Lady's Bicycle, 28 in., for sale at $18.00 cash. All answered. W. JENNINGS WIRT, Gaines, Orleans Co., N. Y.

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WILL EXCHANGE.—Western photos or plates and new books for eggs in sets. All letters answered. Address CHAS. S. MOODY, Oro Fino, Idaho.

WANTED.—Good U. S. stamps. Offer in exchange skins of 387, 412, 498, 761, 474, 759b, 587, 613, 614, 619, 521, 581, 461, 624. 661, 671, 673. 467, 728, 735, 655. THEODORE B. PARKER, 36 Beaumont Ave, Newtonville, Mass.

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WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

WANTED.—May number, 1888, Vol. XXII, American Naturalist. WILLIAM BREWSTER, Cambridge, Mass.

FOR SALE:—Fancy and common Geodes, ranging in price from 25c. to $5.00; halfs from 10c to 50c. Special rates to colleges and museums. H. K. McLELLAN, Hamilton, Hancock Co., Illinois. 179

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THE OÖLOGIST.

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FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

How Some Birds Capture Their Prey.

The manner in which the different species of birds capture their prey is very interesting to the observer. There are divers, snappers borers, grubbers, scoopers, skimmers, diggers and many others of devious ways. In swimming and flying most of the birds give evidence of their habits of securing their prey, as seen in the methods of the Fly-catchers and in the movements of the Ducks in the water. But the habits of nest construction are often quite dissimilar from the methods of food capture. We know that the Woodpeckers can bore for food and at the same time hollow out their nest, but the Kingfisher uses its beak in securing its prey in the water, and yet burrows in the sand when forming its home, while the Woodcock, which bores for its food, builds its nest on the surface of the ground. The Bank Swallow captures its prey in the air, but burrows in the bank like the Kingfisher. The Great Blue Heron spears or snaps up its prey in the water and yet it builds its nest of sticks quite similar to the ways of many small birds. There are no groups of birds which have not marked variations in some habits and it is interesting to note them in comparison.

Loons, Mergansers, Auks, Guillemots and many other birds secure their prey by diving, and many can and do remain a long time beneath the surface and make long flights, so to speak, through the water in pursuit of fishes. I have twice seen birds swimming under the water and they seemed to be flying. In capturing their prey they undoubtedly use their wings in a similar manner. There is small chance of our seeing the actual capture by these diving birds, but we may reason that they secure the minnows by a movement similar to that of the Heron in his wading and snapping.

Let us compare the ways of a few birds in securing prey from the water, on the surface or near it. The Osprey

poises above the selected prey and at a height of from fifteen to 100 yards, generally at about thirty yards, and then plunges at an angle of from forty to eighty degrees. He drops with a mighty rush, and apparently, is certain of destruction if he strikes the water at this speed. No one can positively assert just how the Fish Hawk strikes the water, for though it seems as if he strikes heavily, and very often goes completely under the surface, and in some cases remains under for nearly a half minute, yet it is observable that the prey, when secured, is always brought forth in the talons. It is really remarkable how the Osprey can regulate his plunge and secure the fish with his claws after churning the water to foam. It would almost seem that he makes a grab in the dark after reaching the water. His method of capture differs from all others of the birds which I have observed in America. When the Osprey secures the fish it quickly mounts from the surface and then the capture may be plainly seen in the talons of the fortunate bird. The bird nearly or quite always carries the fish head forward and grasps it with both feet. In quarters where I have observed I believe the average catch weighed about a pound and a half and I judged that fish that weighed less than a pound were rarely hunted, while two pounders and even as large as three pounders were not rarely secured by the Hawk. On one trip in Southern Florida we repeatedly observed a fishing bird that had received an injury to one of its legs, rendering it powerless to use the injured foot. This foot hung down when the bird flew and was of no apparent use in its forays for fish. We carefully watched this crippled fisher in its attempts to catch fish, and noted that the poor bird made as many as eight or ten plunges before securing a prize, and when the fish was secured the prize was held in the claws of one foot, the other foot being of no assistance. After the capture the Hawk flew to a convenient perch on a limb in plain sight from our boat and attempted to eat the fish. The attempt to manage the fish and as well hold to its perch was too much of an undertaking for the disabled bird and in its struggles it lost its hold on the fish, which fell to the ground. The Hawk made no attempt to regain the captured fish, but immediately began fishing again.

The Pelicans are odd feeders and their methods of securing prey are various. In addition to the habit of snapping up fish and other food as they swim about, they have also the habit of swooping down and engulfing fish on the surface or just below. This habit frequently observed in the Brown Pelican in the south is most singular. The fishing birds may be closely watched at St. Petersburg on Tampa bay, where they are protected by law, and where they have become very tame and unsuspicious. I have repeatedly seen the birds dive within ten yards of the wharf where I was standing. The bird flies with flops of its huge wings and has not inaptly been likened to an exagerated Woodcock with its long beak drooping. At times the birds hover over a spot and then drop with a heavy thud into the water. This plunge is made head first and it always seems a miracle to me that the creature is not killed outright from the concussion. The bird seems to strike the water like a huge bladder and sometimes goes completely beneath the surface, but generally only partially, and in most instances immediately rises after its plunge. In these cases where the prey is small and taken from near the surface, I am well satisfied that the Pelican scoops up the food rather than snaps it up with its beak. If one will examine a Pelican's bill it will be found that the upper mandible is firm and very strong, while the under mandible is of very pliable material,

and though but an inch wide when resting, may easily be spread to four or five inches. It is my idea that the bird when fishing for small prey on the surface, and by plunging, merely opens its bill as it strikes the water and scoops up the minnows in its pouch. I have frequently seen the Pelicans feeding so near me that I could distinguish the small fish jumping about in the pouch of its captor just after the bird arose from its plunge. An observer is enabled to do this when the bird flies between the wharf and the rising or setting sun, as the pouch is almost translucent and the jumping form of the little fish may be easily distinguished. Of course when larger fishes are caught the principle of capture is different. I have seen two pound mullet taken from a Pelican's gullet and have been told by a reliable man that he had seen one of a weight of over three pounds removed from a fishing Pelican.

The Gulls and Terns feed almost entirely from the surface and are graceful in all their movements, dropping to the water in bold plunges and skimming above the surface like the wind-driven foam. The Petrels and Skimmers course over the sea, tacking and veering in their search for food. These birds snap up their prey when on the wing as with nearly all the sea birds. The Geese rarely go beneath the surface while feeding, and I have never seen a Swan more than plunge its head and neck under water. Geese and Swans always feed where the water is shallow when on lake or stream, while the sea Ducks feed from deep water. I have no doubt that many species of Ducks feed from the bottom where the water is twenty or more feet deep, and I have found some feeding on fresh water that had the crops filled with crustaceans and aquatic seeds, which were only to be found at the bottom and in fifteen feet of water. The Mergansers, which come very near to being exclusively fish feeders, secure their prey as do the Loons, by pursuit and snapping up the fish. This habit is followed at times by nearly all species of Ducks, and well known river Ducks not rarely partake of a feast of small minnows when they can be found in shallow water and are not difficult to secure.

The Herons feed largely upon fish, but they vary their diet and are even known to eat grasshoppers, while they are very destructive to the larval forms of the dragon fly and other aquatic insects. This is especially true of the Least Bittern and Green Heron, which are very beneficial to man in their choice of food, though they are also destructive to the small fry, especially the Fly-up-the creek or Green Heron, a great poacher on the trout fry. I have watched the Herons and Bitterns as they waded about and have seen the lightning like thrusts of their beaks as they stabbed at their prey. Among the fishes that are preyed upon by the Heron family is the bullhead or horn-pout, which is known to have three erectile fin spines—one on the dorsal fin and one on each side. The wild birds are generally well aware of the danger in swallowing one of these dangerous fishes, whole, and they usually destroy the hinge that works the set-trigger spine before swallowing the fish whole. I once had the pleasure of watching a Greater Bittern dissecting out the dangerous dorsal and pectoral fin spines from a good sized bullhead, preparatory to making a meal of him. The scene occurred on the edge of a marsh and the thunder-pumper was so much engaged, that it failed to note my presence and I had a good opportunity to observe the operation. The bird placed the captured fish on the marsh grass between its feet and with sharp stabs destroyed the attachments of the spines. The work took some time as the fins of the catfishes are strongly connected with the bony frame-work. The bird was flushed

before completing its work and I viewed the result after the disappointed stake-driver had departed. Two of the spines were found almost wholly torn loose and the other about in shape for the feast. This bird had evidently reasoned the matter out to its satisfaction and thus avoided being impaled by the deadly spines. But this was not the case with a mature Great Blue Heron, who had captured a pound and a half catfish in a lagoon. The bird had attempted to swallow the live fish without destroying its set-trigger spines. Result—the Heron was found lying in the shallow water with several inches of the body and tail of its destroyer sticking from its bill;the body of the captured fish being started down the captor's gullet, but held there by the dorsal spine, which had penetrated the throat just back of the greedy bird's bill, and in such a situation that neither fish nor bird could relieve itself, and both were dead; truly, an unforseen tragedy of the wilds. The small bullhead sometimes works its spine-impaling act on fish-eating water snakes, as well as on the birds.

The Rails are interesting feeders and it is a pleasure to see the trim fellows patter through the marsh grass and rushes. They feed on seeds, small molluscs and crustaceans, as well as nymphs and even the smaller minnows. Their movements are active and sinuous on the bogs and grass while the larger members of the family—as the Gallinules and Coots—swim ungracefully and gather food much after the manner of the river Ducks

Of all the pleasing birds while feeding, the active shore birds are the most engaging. If my readers know of a sequestered lake where these sprightly creatures congregate after the nesting saason, then I would suggest that an afternoon be taken in August to observe the Sandpipers and Plovers, as they gyrate about the lake or patter about and feed upon the sands. There is but slight variation in the manner of securing the food. Nearly all of the smaller waders follow the same methods in feeding, and whether upon the shore, as the Sandpipers and Tattlers, or among the Plovers of the fields—as the Killdeer, Golden Plover or Upland Plover—they all run about actively and pick up their food in the daintiest manner. Along shore the Sandpipers may be seen traversing the sands or even wading in the shallow water and gleaning their small shelly food. I have seen the Greater Telltale, Lesser Yellow-legs and Semi palmated Plover catching and eating minute minnows at the edge of the lake. The Spotted Sandpiper, which I have watched with great interest for over thirty years, is a loveable little creature It feeds upon minute animal life and has a wide range in its diet, and searches for molluscs, worms and insects among the debris of the edges of the millpond and on the low land surrounding ponds and lakes.

Among the Scratchers we find but slight variation in food, and while the Grouse, Quail and Turkey feed mainly upon seeds, still they all partake of an insect diet in the summer months. The Wild Pigeon and Mourning Dove are among the most exclusively vegetable feeders. All of the Scratchers are well known from their counterparts of the yard and farm. The Wild Pigeon often feeds on acorns, both spring and fall, and unlike the Red-head Woodpecker, Blue Jay and Grackle, it swallows the acorns whole, filling its crop to repletion and giving its front a peculiar appearance. I have shot Pigeons in the woods and found them stuffed with acorns, and again with beech nuts. The Ruffed Grouse is occasionally in the habit of eating strong-scented buds, which give a balsamic taint to the flesh, which is anything but agreeable. The Spruce or Canada Grouse is rarely good for the table on account of this habit, and at

times others of our game birds are ruined for the table from the same cause. The eating of wild celery by the Canvas-backed Duck is said to greatly add to its excellence as a table delicacey.

Among the rapacious birds there is a greater variation in food and the manner of securing it than would be supposed. All excepting the Vultures seize their prey with the talons, but while the Buzzard Hawks are slow in securing the live creature, the true Hawks, Falcons and Harriers are like lightning in their movements. The Red-tailed and Red-shouldered Hawks are quite content with striped snakes, toads and frogs; while an occasional common striped gopher or chipmunk is added to their bill of fare, and these birds are but seldom found to molest the chickens of the barnyard. It is the Cooper Hawk and its near relative the Sharp-shinned Hawk, who claim most of the chicks from the coop or garden. These depredators will seize a chick or half-grown fowl as quick as a flash and sail away with it before a Buzzard Hawk could make up its mind to an attack. The Buzzard Hawks are not averse to insects at times and scarcely anything in the nature of animal food is refused by them; but then most all of the rapacious birds will vary their diet with a cheaper quality of food. I have seen that bird of elegant appearance in the air—the Swallow-tailed Kite—sweep down and secure a snake and bear it aloft, trailing it through the air as it swept the heavens in graceful evolutions. According to my appreciation there is no bird in the air quite equal to the Swallow-tailed Kite. Such dashes and plunges and unexpected gyrations as they make. While the common Hawks are silently soaring or plodding through the forests the Kites are seen to perform all the evolutions known to the bird world.

The Sparrow Hawk catches small birds with great dexterity, but compensates for this lapse in decency in a measure by gathering in many of the pestiferous rodents that infest the wood and field. In the summer when the grasshoppers are plentiful, this little Hawk destroys an amazing number of these insects. It is interesting to watch a Sparrow Hawk catching hoppers. He will sit on a dead branch and fly about, first to one side and then to another, much after the manner of a Flycatcher; and he is almost as accurate in his work. I once observed a Sparrow Hawk catch a grasshopper on the wing, but the work is mostly done on the ground, and the bird always returns to his perch before eating his capture.

The little Blue-winged hawk or Sharp-shin is a veritable friend among the small birds. There is no limit to his destructive inclinations and I only forgive him when he moves into the city in November and December and wages war on the imported Sparrows.

The Owls are flesh feeders and not particular as to choice, as they will eat most anything dead or alive, but will become very hungry before they will eat tainted meat, as I have proven many times with my pet Owls. This is not anything like the habit of the Bald Eagle, the emblem of our country, which often feeds on putrid flesh, and I really believe prefers stale fish to fresh. One Owl that I had as a pet for a long time would eat all fresh meat that I handed him, whether steak, mouse, snake or any small bird. His habit of eating was always the same, and he invariably held the object in his claws and tore it with

MORRIS GIBBS, M. D.

(To be Continued.)

Wisconsin Hash.

What has become of our House Wrens, or in fact any of our Wrens? I have not seen a Wren of any variety this season, in town or out of town. All

of my Wren houses are vacant, except, perhaps, tenanted by a few spiders, etc.

The Evening Grosbeaks came this year January 29th, a warm cloudy day, some soft snow; at first a flock of a few individuals, later large flocks, sometimes nearly a hundred. They stayed with us until May 2d, when I saw a female, the last one seen: the main part of the flock left about the middle of April; two pair stayed around in the evergreens in our yard so close and acted like breeding birds so much, that I actually was foolish enough to climb an evergreen in the vain hope of finding a nest; but then, the fools aren't all dead yet.

The beautiful, or I rather say the dear little Bobwhite, are getting bred in hereabouts again quite plenty, owing to a protecting law of five years, and either two or five years longer. (Am not certain.) I call my dog by a short, sharp, quick whistle; one day he flushed a pair of Bobs. Later one called and I answered; we answered back and forth several times. The dog would look at me, then toward where the Quail was, then at me, etc., prick up his ears and could not make out who the other fellow was calling him.

One day while my dog and I were out I found a Pinnanted Grouse's nest, bird on. I watched her some time and as she did not offer to leave, I sat down by the nest and after a little manouvering she allowed me to stroke and pet her to my hearts content, and to count her eggs, a fine set of sixteen.

Any one wishing to secure, perhaps, one hundred fine colored photographs, size 10½ x 14, of Audubon's Birds of America, taken direct from Audubon plates, can do so by buying the Sunday Chicago Record-Herald, 5 cents. The pictures come to your news dealer not folded, or in other words, flat, and if you stand in with your newsdealers you can have him save out yours before his delivery boys fold them; one plate comes every Sunday as a supplement. The series began June 16th. I do not intend this in any way for an advertisement of the Chicago paper, but as a help to my brother naturalists, whom it may concern.

A good way to trap English Sparrows is to place a large cage, with a small open door, on the ground near chicken coops, putting some feed inside.

Any one having a singer Canary should never feed it lettuce; and if in the habit of feeding it lettuce, should stop off gradually.

How many species of birds, besides the Rose-breasted Grosbeak, eat the potatoe beetle? I made a statement several years ago in the OOLOGIST that I wish to correct, that the Cedar Waxwing eats the potatoe beetle. It should have been Rose-breasted Grosbeak, a female.

GEO. W. VOSBURGH,
Columbus, Wis.

Notes On Two Birds of South Jersey.

FISH CROW—This little relative to the American Crow can only be identified from its larger relation at a close range They inhabit the trends of the coast and bay, and do not go far from brackish water.

As nesting sites, they prefer a more or less wooded island marsh to the dense woods that set farther back. Their nests are as bulky as the American Crow, but the depression where the eggs are laid is much smaller. The height ranges from ten to forty feet at times in the top of a small gum or cedar tree, while at others against the trunk of a large tree.

Complete sets may be taken with three to five eggs between the first and latter part of May. I have never collected a full set in April yet. The young of the American Crow are most always ready to leave the nest when the Fish Crow completes her set.

Of course the eggs look like other Crow's eggs, but much smaller, and at times a small American Crow and a large Fish Crow will look just alike, and measurement alone will not identify them.

The last egg laid is sometimes beautifully marked.

AMERICAN OSPREY—This well known bird is fast decreasing in South Jersey, especially around the brackish waters. I see no accountable cause for this, excepting every year several old dead limbs break off with the nests.

Every set a collector gets of this bird he well earns First, he generally has a hard tree to climb, then a dead limb to go out on, and when that point is reached he strains every nerve to reach over the nests, which are sometimes five feet high. About that time out comes a farmer and cries out, 'come down out of that tree and leave them Hawks alone."

I have never known the old birds to strike, but they have come very near my head.

They lay from two to four eggs. Three is the usual number and four I consider very rare. I have collected eggs for eleven years and have only found three sets with four. A series of these eggs are the prettiest specimens in a collector's cabinet. I can say right here that I never saw the eggs in the same set of like appearance. One egg I have in my collection is nearly unspotted with a cream ground.

WM. B. CRISPEN,
Salem, N. J.

New Books.

MR. CHUPES AND MISS JENNY. The Life Story of Two Robins. By Effie Bignell, The Baker & Taylor Co., 250p, 12mo. cloth, illustrated, 8 full page photo engraving plates, $1.00.

The captive history of two robins who became at first the involuntary companions of human kind. Later love and sympathy made them unwilling to take the freedom opened to them. The story is so fascinating and shows such keen sympathy with bird life that the reader can scarcely believe the incidents true. Yet this is a true robin history, and in it robin character and temperament are clearly shown.

"No sweeter, more sympathetic story of animal life has ever been written than that which is contained in this little book Rudyard Kipling and Seton-Thompson have opened up for us a new literature, in which animals play the principal parts. This little story of Mrs. Bignell's is a worthy companion of the masterpieces of these famous authors."—*Dr. David Murray.*

TAXIDERMY. Comprising the Skinning, Stuffing and Mounting of Birds, Mammals and Fish. Paul N. Hasluck, Cassell & Company, New York and London. 16mo, cloth, illustrated with 108 fig, 40c.

In these 160 pages is included clear and succinct directions in the art of preparing and preserving the skins of birds, mammals and fish, and of stuffing and mounting them so as to impart to them as close a resemblance to living forms as possible. There are also brief instructions on preserving and stuffing insects, a chapter on polishing and mounting horns, and another chapter on preserving insects and birds' eggs. A large amount of valuable information is contained in this small volume and over 100 illustrations give additional clearness. It contains the largest amount of taxidermal information ever published.

WITH THE WILD FLOWERS. From Pussy-willow to Thistle-down. A rural chronicle of our flower friends and foes, describing them under their familiar English names *New and revised edition* By Maud Going (E M. Hardinge), The Baker and Taylor Company, New York, 16mo, cloth, 14x271p, 58 pages of illustrations, $1 00.

A delightful volume giving flower facts, rather than mere names and classifications. It is written by a true

lover of nature, who adds to exceptional literary feeling the rare gift of making instruction thoroughly enjoyable by a style at once clear, entertaining and imaginative. The book carries us through the whole season with the flowers as they make their appearance. It is accurate in its illustrations and text to the point of scientific precision, and its style and method (which discriminate it widely from the ordinary "botany") enhance, through their intrinsic attractiveness, its power to instruct.

Figure 38.—LADY'S-SLIPPER (Cypripedium acaule).

From "With the Wild Flowers."

Dugmore, Bird Homes, The Nests, Eggs and Breeding Habits of the Land Birds Breeding in the Eastern United States with Hints on the Rearing and Photographing of Young Birds, 200p. 50 photoeng, 15 full-page col. plates, 64 eggs in natural colors.....2 00

Elson, Birdies, 105p, ills..... 25

*Fisher, The Hawks and Owls of the U. S., 210p. 26 col. pl. Wash '93; a fair copy of this very rare and desirable book.....3 50

Fisher, Out-door Life in England, 474p.....1 90

Fowler, Summer Studies of Birds and Books. 288p..... 75

Goss, History of the Birds of Kansas, describes 529 western birds, 692p. 38 full-page photo-engravings of groups of birds, large 8vo, new and last edition (7 00).....5 00

Goode, The Published Writings of Philip Lutley Schalter, 136p 40

Greene, Birds of the British Empire, British Birds, Birds of India, Africa, America and Australia, 369p. 80 ills.....1 30

——, Parrots in Captivity, 3 Vols. 400p. 81 full-page col. pl. large 8vo; a magnificent work. '84, ($15).....8 25

*Harting, Hints on Shore Shooting, with a Chapter on Skinning and Preserving Birds, 88p. '71..... 40

Hasluck, Taxidermy, 160p, 108fig The best book for the money ever published..... 40

Headley, Structure and Life of Birds, 412p. 78fig. 1895. An invaluable book to the Student. 1 60

Henshaw, Ornithology of Portions of Nevada and California (Wheeler Survey '76), 32p. maps (also 100p. of other matter).....1 00

——, Ornithology of Portions of California. Nevada and Oregon. (Wheeler Survey of '77 and '78) 54p. maps, (also 300 pages of other matter.....2 00

Ingersoll, Birds' Nesting, a Hand-book of Instruction in Gathering and Preserving the Nests and Eggs of Birds for the purpose of Study, 110p. 15fig. ($1.25)..... 1 10

*Jardine, Humming-birds, 2vols. 630p. 95 col. pl. Memoirs of Linneus and Pennant, Edinburgh '33..... 2 19

*Jones' Cassell's Book of Birds, Vol. I, Introduction; Parrots, Passerine Birds, Ravens, and Birds of Prey, 312p. 10 col. pl. 100 ills.....1 40

Kearton, Wild Life at Home: How to Study and Photograph It, 188p. many photo-engr. 1 50

Kingsley, Popular Natural History, A Description of Animal Life from the Lowest Forms Up to Man, 2 vols. 728p. 507 ills., many pl. Boston '90, 132p. devoted to Ornithology.....6 60

——, The Naturalists' Assistant, a Handbook for the Collector and Student with a Bibliography of 1,500 Zoological Works, 228p. 40 ills..... 85

Knobel, Field Key to the Land Birds, 55p. ills, 9col. pl..... 75

*Lee, Taxidermy or the Art of Collecting, Preparing and Mounting Objects of Natural History, 244p. ills. London '43, ($.75) 70

McIlwraith, The Birds of Ontario, being a concise account of every species of bird known to have been found in Ontario, with a description of their nests and eggs and instructions for Collecting Birds and Preparing and Preserving Skins; also directions how to form a Collection of Eggs, with Glossary of technical terms, 426p. ills. (This is the best cheap work for collectors in the Gt. Lake Region —).....2 00

Manton, Taxidermy without a Teacher, 56p. ills. (50)..... 40

Martin, Our Song Birds and Domestic Fowls, 384p. London '60 35

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Parrot Book, How to Rear and Manage them in Sickness and in Health, with chapters in Hawking, Hawking-birds and Owls, 196p. ills. 45

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Studer's, Ornithology or the Science of Birds from the text of Dr. Brehm, with 212 illustrations by Dr. Theo. Jasper on thirty-seven magnificent full-page pl. 156p. (size 11x14 in) elegantly bound in Russia and Gilt binding broken at corners and back, contents as new ($15) 5 10

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Maynard's "Birds of Eastern North America" This elaborate work was published about 25 years ago at $18 and contained 532 pages. I have one part containing about 300 pages (over ½ of original) bound in tag board covers. The Thrushes, Warblers, Starlings, Water Birds and Shore-birds are complete $3.00. I also have a copy containing about ¼ of original work at 90c. Sample pages of work for stamp. Style of text see article of "Black Duck" in Dec. 1900, OOLOGIST

Merriam, Report of Ornithologist and Mammalogist of U. S. for '88imp, 60p 25

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THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 8. ALBION, N. Y., AUGUST, 1901. WHOLE NO. 179

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No.179 your subscription expires with this issue
180 " " " " Sept., "
183 " " " " Dec., "
190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This August OOLOGIST was issued July 20th. The Sept. issue will be printed on Aug. 20. Copy intended for that issue must be forwarded by return mail.

CERULEAN WARBLERS Eggs in sets with nest in situ for sale at list rates. Sets of 617 for exchange. W. E. SAUNDERS, London, Ont.

FOR SALE.—My collection of small birds; 169 in all. No's 215 and 640 among them. All good skins. Will send list if you mean business. W. F. WEST, Greensburg, Ind.

EXCHANGE.—A fine lot of bird skins to exchange for a pair of live Pheasants, any variety Correspondence solicited. C. VAN L. SMITH, 109 Good St., Akron. Ohio.

COLLECTORS! Why don't you send for my cheap prices on Birds Eggs, singles and sets. I am just giving them away. All letters answered promptly. A D. DOERGE, P. O. Box 3, Navasota, Texas.

FOR SALE CHEAP.—Fine AI sets with data such as Chuck-will's-widow, Louisiana Water Thrush, Titmouse, Nuthatch, Hawks, Owls, Vultures and many more. Write for lists. ROBT. D. FOXHALL, Tarboro, N. Car.

FOR SALE.—Sets of American and Barrow's Golden-eye, Loon and R. B. Nuthatch, skins of Gray Ruffed Grouse, Cinnamon Teal and Picket Pin Gopher, back numbers of "Osprey," bird pamphlets, etc., or will exchange any of above for Davie's Taxidermy, good Watch or Telescope. WM. A. BOWMAN, Columbia Falls, Mont.

WILL SELL for best offer in cash or eastern specimens of birds or eggs. One glass case containing thirteen squirrels mounted upon branches, etc. Case contains one Black, one Red, one Grey. one Chipminck, one Flying one Fox, one White Face Fox, one Florida Fox, one German Black, one German Red. one Mexican Red and Grey, one South American Flying, one India Black and Yellow. All answered. GEO. SWEZEY, 66-79 Jackson St., Newark, N. J.

WILL SELL CHEAP or exchange for AI sets with data. Lattin's catalogue. 1000 points and buts of arrows and spears, 3 for 1c exchange 5 for 1c cash; back numbers OOLOGIST, "Birds" Part I, colored plates, "Birds of New Jersey," "Birds About Us," Abbott; Eastman pocket kodak; 22 and 32 cal. Smith and Wesson revolvers; a handsome tan sole leather gun case for carrying two guns; a four draw brass telescope; pair of boy's climbers; sets of cigarette cards; trap door spider's nest; large pieces of petrified wood from Arizona and pottery from the Cliff Dwellers; old copper cents and half cents; two glass topped cases, one, two drawers (walnut) 21x24; other a wall case 16x24 (cherry); also sets of AI birds eggs. Everything is AI and must go cheap for cash or AI sets. B. A. CARPENTER, Salem, N. J.

I AM COLLECTING this season in Southern Arizona in the Huachuca mountains. I am securing many rare and desirable sets, including Red-faced, Virginia, Audubon's, Black-throated Gray, Lucy's, Olive, Grace's and Sonora Yellow Warblers; Coues', Vermillion, Sulphur-bellied, Olivaceous and Buff-breasted Flycatchers; Stephen's Whip-poor-will; Rivoli, Broad-tailed, Cactus and Black-chinned Hummers; Arizona and Long-crested Jays; Scott's Oriole; Hepatic and Cooper's Tanager; Rock and Canon Wrens; Canon Towhee, Painted Redstart, Arizona Junco, Pygmy Nuthatch, Chestnut-backed Bluebird, White-necked Ravens and many other varieties too numerous to mention here. Everything will be prepared in the finest order possible—nests with all sets not larger than Jays. Parties wishing to build up their collections send for my full list and *cash prices*. Specimens sent on approval where parties are known to me or where good reference is furnished. O. W. HOWARD, Ft. Huachuca, Arizona.

WANTED.—May number, 1888, Vol. XXII, American Naturalist. WILLIAM BREWSTER, Cambridge, Mass.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

FOR SALE:—Fancy and common Geodes, ranging in price from 25c. to $5.00; halfs from 10c to 50c. Special rates to colleges and museums. H. K. McLELLAN, Hamilton, Hancock Co., Illinois. 179

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OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

The readers of the OÖLOGIST will be pleased to learn that Mr. Walton I. Mitchell, who has an almost insatiable mania for *rara avis*, was successful in the capture of THE specimen of his ornithological career on June 25th at Hagerstown, Maryland—Miss Blanche Crawford—"At Home 534 Summit Ave. St. Paul, Minn., after July fifteenth"

The entire oölogical collection of Miss Jean Bell has been purchased by the Hon. John Lewis Childs, Floral Park, N. Y. This collection is undouttedly the finest in the world, composed exclusively of North American species. It is made up of over 30,000 eggs, some 10,000 perfect sets, covering 850 species.

Among other species it contains three sets of the California Vulture, fifteen of the Sand-hill Crane, six of the Everglade Kite, ninety of the Sharp-shinned Hawk, three of the Cory's Least Bittern, one Spotted Owl, two Whooping Crane, five Clarke's Nutcracker, etc., etc.

A feature of the collection is the many nests of which there are about 400 rare and perfect specimens

It is reported that Miss Bell spent over twenty-five thousand dollars in getting this magnificent collection together.

Under date of March 25th Mr. O. S. Biggs of San Jose, Ill., writes: "A friend sent me a fine specimen of a male Passenger Pigeon which was killed Mar. 12 near Oakford, Illinois. It is the first one I know of being killed here in 8 or 9 years. I have it mounted and in my collection."

The following note from Wm. Cudney announcing the death of Mr. D. Priddy was omitted through error from the May OÖLOGIST:

"I wish to announce to the readers of the OÖLOGIST the death of Mr. D. Priddy of Toronto, whose ad. has appeared in the OÖLOGIST from time to time.

He died suddenly from heart trouble a few days since while at his work. Mr. Priddy was a collector of shells and took quite and interest in that branch of science."

Bird Life of a Virginia Island.

Cobb's Island, a narrow strip of land lying on the coast of Virginia in the Atlantic Ocean near the southeast end of the peninsula formed by Northampton county, was in former years, a favorite collecting ground for ornithologists and oölogists. While of but a limited area, some nine miles in length, and six miles wide at its greatest breath, its conditions as a breeding ground for sea-fowl were most favorable, and, each year, vast numbers of them nested along its stretches of salt marsh and beach. The ornithologist here found a bird-metropolis of a most interesting natnre, presenting a population of thousands.

During June-July, 1895, I spent three weeks on the island among its birds. The season was a favorable one, and all the specimens were nesting. From the time our boat slipped from the mainland shore and set sail for the island, birds were numerous. Common and Forster's Terns, with their graceful airy flight, hovered around the boat, darting suddenly to the water sometimes, sending up splashes of spray and catching small fish that ventured too near the surface.

Merry Laughing Gulls, in pairs, flying low over the surface of the water, each bird of a pair keeping close to its mate, so that their wings nearly touched, indicated that the species was breeding. Black Skimmers passed us now and then, and toward the horizon a long black line of Surf Scoters rested on the water, this species lingering even at so late a date. Gulled-billed and Black Terns, in small numbers, and a single Royal or Caspian Tern passed by the boat.

We reached the island late in the afternoon, and stopped at the little hotel. (now washed away.) The following morning, equipped with hip boots, some old clothes and a spacious wicker basket (for eggs,) I started for the salt marshes of the western side. In order to reach these to advantage I hired a sail boat and a worthy sea-captain to manage it. An hour later we were among the great colonies of Laughing Gulls (*Larus atricilla.*) Thousands of these birds hovered over the marsh, their cries, in union, creating a terrific din when we neared the nests. The sky was nearly obscured by the vast number of circling birds. This was my first experience among sea fowl, and, what a revelation it was! All over the marsh the nests were scattered. They were built of marsh grass and other similar material, sometimes raised two feet above the ground, and most of them held sets of three eggs, while sets of four were found in several. Many of the eggs were merely laid upon the "wind-rows" of weed and grass. I could have gathered several basketfuls of eggs, but took only a few of the handsomer sets. While looking over the the "wind-rows" I ran across a number of sets of Forster's Tern (*Sterna hirundo*) laid upon the rows without any attempt at a nest, a mere depression having been made and the eggs laid in it. I also ran across several fairly well made nests of this species, of grasses, placed on top of the "wind-rows." As I went to examine a particularly well made Gull's nest, I nearly stepped on a Clapper Rail (*Rallus crepitans*) that was sitting on her nest of nine eggs. This was my first set of this species and I was naturally elated at my find. The Captain perceiving this, told me that I could gather a barrel of these eggs if I so desired, which statement proved true, and some twelve sets taken. The Clapper Rails themselves were not much in

evidence, we only getting an occasional glimpse of them as they skulked amongst the high marsh grass. The nests are built of marsh grass and placed a foot or so above the ground in the high grass. The grass surrounding the nest is pulled down by the birds, so that the ends hang over and form a canopy above the nest. This habit facilitates locating the nests, for by scanning over the marsh and noting where the even aspect of the grass is interrupted by the ends being thus pulled over, the collector may find many a nest that would otherwise be overlooked. In this same marsh we found several nests of the Seaside Finch, and saw many birds of that species. The nests are difficult to find. They are usually placed among the grass tops, and the species has a penchant for selecting the grass bordering on the small sloughs. After seeing the wonders of this marsh, I returned to the hotel and worked all of the afternoon and most of the next day blowing the specimens.

On the following day I started early to investigate the bird-life of the beach, and especially to visit the large colonies of Black Skimmers at the northeastern end. This time there was no need of a boat, but the Captain's services were again secured and he appeared on time, driving the only horse on the island hitched to a delapidated two-wheeled cart. As we proceeded along the beach, about the first birds to attract my attention were a pair of Wilson Plovers. They were acting as if their nest was near, and a careful search revealed a cute little juvenile, covered with down and faintly speckled, crouching among the pebbles of the beach. The mimicry was perfect, and it was by mere accident I noticed him. Several American Oystercatchers were noticed on the beach and I found a nest, or rather a depression in the beach, with three eggs. One egg was "pipped," and so I did not disturb the set. Another pair evidently had a nest near by, but a careful search failed to reveal it.

Toward the northeastern end Common Terns (*Sterna hirundo*) were very numerous, being in hundreds and their nests were scattered all over the beach, the eggs being laid in mere depressions among the pebbles, and the eggs constituted the average set.

At the extreme northern end, on the eastern side, we found the Black Skimmer colonies. Hundreds upon hundreds of Skimmers were congregated and nesting. As we neared the nests, the birds set up an awful uproar, their "barking" notes together with the screeching of the Terns making an odd combination of discord. When we reached the nesting ground, a great line of Skimmers began to fly around and around in single file, turning toward the ocean, then curving toward the land again, and approaching us directly, but only to curve aside at the distance of some fifty or sixtty yards, all the time uttering their peculiar "Ohe hark" 'Ohe bark" "Ohe bark." Their oddly shaped red-orange colored mandibles pointed downwardly, and the pure white of their underpart plumage contrasted strikingly with the black of their upper parts. Now and then a skimmer would fly at us, coming so close sometimes as to make us dodge but they always curved aside when within three or four feet.

On the sand dunes and on the sandy beach were hundreds of their eggs, remarkable for their beauty, their ground color being averagely of a bluish white, though sometiues a very clear white. The markings are profuse and of umber, lavender and black. Four eggs constituted the full set, though sets of three eggs were common. The eggs were laid in rather deep depressions of the sand, and on a single sand dune I found as many as seven sets. Owing

to the exposure the incubation is largely accomplished by the sun's rays, and the birds do not constantly sit upon the eggs. In the same locality with the Skimmers, we found a number of Gull-billed Terns nesting, their eggs laid in depressions in the sand and averaging four to a set, though several of three were found.

Formerly the Royal Tern nested in great colonies at this part of the island, but not a bird of this species was noticed. Mr. Robert Ridgway found the Royal Tern in great abundance on the beach when he visited the locality many years previous (See Davies' Nests and Eggs) and records that its eggs were so thick on the beach, that it was with difficulty that he walked without stepping on them. The Caspian Tern also formerly bred abundantly on the island, but we did not notice its eggs on our visit.

Thousands of Least Terns (*Sterna antillarum*) used to nest on the island, but, alas! they have all been sacrificed to the millinery trade, thousands of them having been shot by mercenary hunters who sold the skins to dealers in New York. Not a single specimen did we see, and the Captain informed me that it had been a long time since he had observed the species on the island. The Willet is another species that has decreased on the island. I only saw a few pairs.

But now, Cobb's Island is not what it used to be. The ocean has made great inroads upon it and it has greatly decreased in area. The little hotel has been washed away, and the birds are not as numerous as formerly. But there is an abundance of bird life remaining. The Skimmers and Gulls are in great numbers yet and the colonies are still interesting. The collecting days for the island, however, are over. All sincere oölogists must certainly appreciate that there is a marked decrease of bird life throughout the country. There is no excuse nowadays for basketfuls of eggs. What remains of these Cobb's Island colonies, will be protected. The A. O. U. has already taken measures to this end, and happy is the thought, that for many days to come Cobb's Island's feathered population, a delight to the eye of the bird lover, unmolested and protected, will increase as the years roll by.

JOHN W. DANIEL, Jr.,
Lynchburg, Va.

Some Twice Occupied Nests and Other Notes.

On July 1, 1897, at Torresdale, this county, I took a set of three eggs and nest of the Great-crested Flycatcher from a large knot hole 20 inches deep, 10 feet up in an apple tree.

On May 2, 1898, I took a set of three eggs of the Flicker from the hole capturing the female sitting on them which I gave its liberty

May 7 took set of 5 eggs again capturing the bird which again was released. On May 28 the hole contained 8 two-third incubated eggs. Captured the Flicker brooding them and let her go.

On April 18, 1899, found a Screech Owl roosting in the hole. It has not since been used.

June 9, 1898, took a set of five Flicker's eggs from cavity excavated in a maple stub 15 feet up On April 15, 1899, from the hole took a fresh egg and the female Screech Owl (gray). The owl lived only two days and dissecting her I obtained another egg and found 5 small eggs in her ovary.

June 27, 1898, at the above locality (Frankford) took two eggs of the Red-headed Woodpecker from a cavity 30 feet up in a maple stub. This hole had been used since during 1899, '00, '01 by *Passer domesticus*.

On July 20, 1900, at Riverton, N. J.,

took set of 3 House Wren's eggs from Flicker's cavity 20 feet up in a stub. On the same day at New Albany, N. J., took a set of House Wren's eggs from a Downy Woodpecker's hole 15 feet up in a branch of a dried tree in a marsh.

On May 22, 1901, at Holmesburg, this county, took a set of 5 fresh Rough-winged Swallow's eggs from an unfinished Kingfisher's hole excavated in the top of an unoccupied quarry. In 1899 a friend found a Rough-winged Swallow's nest in an old Kingfisher's hole but tore it out before it was finished.

On April 26, 1901, at Volunteertown, this county, took set of 4 eggs of the Robin from a nest situated on a girder of a steel railroad bridge. On May 7 took another set of 4 from same nest.

In 1899 took 14 eggs of the Flicker, several sets, from a cavity excavated in a willow 15 feet up. During 1900 I took several other sets. In the winter two Screech Owls were taken from the hole. May, this year, a boy robbed a *Passer domesticus* of her eggs, the nest of which was built in the hole. June 8, this year, I took a set of 6 *Passer's* eggs from the hole.

April 14, 1898, took a set of 3 fresh eggs of the American Sparrow Hawk at Frankford from a Flicker's hole 35 feet up in a black oak stub. In 1897 a brood of Flickers were raised in the hole.

RICAARD F MILLER,
Philadelphia, Pa.

Albino Eggs of Sialia sialis.

Of the many specimens of runts, curious colored and shaped eggs that I have seen in my many years as a student of oölogy, it has never been my good luck to see a pure white set of albino eggs of the Bluebird until this season, and this was only accomplished through the kindness of my naturalist friend, Mr. J. E. Teague of this town, who has ever been a close observer of the birds of this locality, and to him all credit should be given for had it not been for him the eggs would never have been found.

On April 1st as Mr. Teague was passing through an old orchard of apple trees he saw a Bluebird fly from a hollow tree several rods away. He at once thought a nest of common eggs of the Bluebird was in the tree, but being much interested in oölogy he went to the tree for a look at the nest. The hole was in the main trunk of the tree, about five feet from the ground and about 10 inches in depth, a vacated nesting place of the Flicker. On looking in Mr. Teague beheld not blue eggs but pure white ones, four in number. This was indeed a surprise.

On May 2d he again visited the nest. The Bluebird was on the nest and had to be driven from the hole before the eggs could be seen This time five eggs rewarded his gaze and this completed the set as no more were laid.

On May 8th Mr. Teague notified me of the finding of the nest and eggs and on May 10th I tramped six miles through the mud in a heavy rain storm and collected the nest and eggs. They are very glossy and look lika eggs of the Woodpecker, closely resembling eggs of the Yellow-bellied Sapsucker (*Sphyrapicus varius*), both in color and size. They measure .80x.62, .81x.62, .78x.61, .78x 61, .82x 63.

The nest was very large and bulky and composed of dried grass, lined with the same and fine rootlets.

The nest and eggs now repose in my cabinet and I prize them very higely.

GUY H. BRIGGS,
Livermore, Maine.

"Oh, you cruel boy, to take those eggs out of the nest! Think of the poor mother bird when she comes—"

"The mother bird's dead, miss."

"How do you know that?"

"I see it in your hat!"—Punch.

Unusual Nesting Sites of Melospiza fasciata.

The Song Sparrow in the spring builds her nest on the ground or near it in this locality (northern Philadelphia) but on May 2, 1898, I found a nest in an unusual situation. It was placed in a hole in the wall, inside wall, of an old ruin, roofless spring house, protected from wind and storms except on the northeast. It was over 12 feet from the ground and empty when found, but five days later (May 7) it contained four eggs, which were collected with the nest. Both nest and eggs typical, the nest composed entirely of grass stems, lined with horse hair.

Later in the season, in late June and July, it is not rare to find second nests six and seven feet up. Why the birds should have chosen the above *situ* for a first nest I cannot explain.

RICHARD F. MILLER,
Philadelphia, Pa.

Potash.

I note Mr. Bowdish's article in last OOLOGIST.

When I published my "Directions for the Preparation of Eggs," I advised the use of caustic potash. I was promptly "taken down" by a prominent western ornithologist for being behind the times. He advised the use of pancreatin as a much more satisfactory drug. Since then I have thorougly tried this drug. I do not find it as quick nor as thorough as caustic potash, and it is very expensive, while caustic potash is cheap, and can be had anywhere.

I heartily endorse Mr. Bowdish's position and still believe in the caustic, combined with a steady hand and plenty of patience.

ENNEST H. SHORT,
Rochester, N. Y.

How Some Birds Capture Their Prey.

(Continued from July Number.)

his beak. The Great-horned Owls that a friend of mine owned for two years or more, and which he reared from the nest, finally escaped and at once visited a neighboring chicken coop and killed several chickens before they were detected. This shows the latest ferocity in predacious birds.

The Great-horned Owl is an excellent provider for its mate and growing family. One nest visited held upon its edges the following food supply—remains of one Ruffed Grouse, parts of two hares and a Woodpecker, besides the feathers and hair of other birds and small mammals. This Owl is the only Owl that is known to be destructive to game and of no benefit to mankind, and it stands in the list with the Cooper and Sharp-shinned Hawks as a marauder of the worst type. Still I cannot but think that there must be some redeeming features, for as with the Butcher bird I cannot think that he is as black as is painted.

The Cuckoos are among the most useful birds that we have. Their food in season is largely of caterpillars. I once witnessed a Black-billed Cuckoo attack a nest of the tent caterpillars, tear into it and eat a surprising number of the occupants of the structure. The Cuckoos also eat grasshoppers and a great variety of other insects and also fruit of several kinds, more especially berries. In following this diet of caterpillars the stomach must be well filled with hairs, and this is so to the extent of having the organ look as if lined with hair.

Everyone who has studied birds knows of the oddly formed tongue of the Woodpecker, and it is easy to understand its adaptability in drawing forth the insect life that is hidden in the decayed wood. The Woodpeckers in the great lake region have mainly the same habit in securing food from the cavities which they

dig to uncover the insect life, and the dainty Downy works and feeds in practically the same manner that the large Pileated Woodpecker follows. But there are two exceptions to the general habit, or we may say that there are changes at times. These differences occur in the Yellow-bellied and Gold-winged Woodpecker; for the former at times varies his diet with liquid sweets, while the latter sometimes leaves the tree trunks and plunges his bill into the soft earth of the ant hill in search for this kind of insects. Therefore, these two Woodpeckers are at times known as the sap-sucker and grubber.

The Golden-wing leaves its perch on trunk and limb, and takes up a position on an ant hill or even on the level ground, where it devours the ants with great satisfaction. This is the more astonishing change in a bird when we consider that there are so very few birds which will eat ants at any time, and I do not know of another species in my neighborhood which is largely interested in ants, excepting the variable Sap-sucker. Someone has claimed that the Yellow-bellied Sap-sucker embraces 36 per cent. of ant food, but then this matter of food differs in season, and both the Yellow-bellied and Flicker arrive some time before the ants appear in any number in the spring.

Upon its arrival in late March, or more likely about the tenth of April, the Yellow-bellied Woodpecker proceeds to bore a number of holes in the bark of certain trees producing sweet sap. These usually selected are the sugar maple and common planted evergreen, though others are often bored, including the tulip tree. The holes are generally about a quarter of an inch in diameter and are rarely much more than that in depth. The holes are usually elliptical in shape, and especially so on the coniferous trees. Many claim that these holes are bored so that the bird may secure the insects which will congregate around the sweets, but I think this a ridiculous notion, as the Sap-suckers are often seen feeding from these holes when there is an April snow storm and much too cold for any insects to appear on the bark or anywhere in the open. The Sap-sucker is easily approached when feeding and I have stood at the distance of five or six yards and watched them many times, and I am fully satisfied that they very rarely catch an insect in their first week's stay at the north; but that they sip the sap from the bored holes is surely the case, for I have witnessed the act scores of times.

In the Belted Kingfisher we have another species that gets its living by diving in the lake and stream, but this plunge is entirely unlike the plunge of the Pelicans or Osprey. The Kingfisher hovers as does the Osprey and as followed sometimes by the Pelicans, and like those larger fishers is also a surface fisher. The Kingfisher descends at an angle of sixty to eighty degrees and enters the water bill first, but so quickly is the stop made at the surface that in many cases the bird does not disappear beneath the water, though I have seen the Blue Angler remain ten seconds under the surface. The prize does not average more than three and a half inches long and many minnows of no greater length than two inches are creeled by this law breaker; however, a five inch shiner is occasionally brought to the surface. When a small minnow is captured it is generally swallowed whole, the bird perching itself and taking the little chub head first. But when a minnow is too large to swallow whole the prize is dissected and eaten piecemeal, and this operation is sometimes performed in the presence of observers; but I have only once seen the dissection. The bones of the fish are usually regurgitated after the carcass is digested, after the manner of the Owl's process of getting rid of the bones of small mammals

it has eaten. These bones when ejected in the burrow are carried away from the nest as the birds are very cleanly in their sand house.

These anglers of the lake and stream are not confined to a diet of fish, though I believe that they prefer minnows to anything else and they are found about streams and lakes at all times. They not rarely pick up the larger insects and they often eat grasshoppers, and I once observed one catch and swallow a small frog. It is said that in Arizona and other arid districts, the Kingfishers live mainly on insects and lizards, presumably from the lack of suitable waters at certain seasons. It is well that a bird of a fish-eating habit can accommodate its ways to the means offered in a desert land.

MORRIS GIBBS, M. D.

(To be Continued)

MISS JENNY. MR. CHUPES.

THE DRAMATIS PERSONÆ.

From "Mr. Chupes and Miss Jenny."

Pan-American Notes.

A fine lot of Pueblo pottery and relics of different sorts is shown in the Ethnology building of the Pan-American Exposition. The Pueblos, who were dwellers in the plains and in the c iffs as well, are one of the most interesting, from an archaeological point of view, of all prehistoric people. Their civilization was remarkable, and their ingenuity in pottery making, basket weaving, bead work and many other things, very great.

They had many peculiar customs, ceremonies and symbolic rites, and their pottery is ornamented with figures the significance of which puzzles the novice and expert alike. One of their peculiar symbols was a broken instead of a continuous line drawn about a bowl or other dish, suggesting perhaps the finite character of life. A bowl shown in the exhibit of the Pueblo pottery has the reproduction of two feet upon the bottom of it, inside, suggesting possibly the transitory and insignifigant character of terrestial existance.

Fine specimens of the famous "black and white ware," are shown, as well as the "red ware," most of which is black on the inside. A number of specimens finished so as to give the outside a corrugated appearance, are shown.

Many ingenious fine tools, finished stone implements, ornamental trinkets, presumably having religious signifigance, are on exhibition in the cases

The basket work of Indians is very wonderful. Baskets made by comparatively modern Indians are shown. Water-tight baskets in large numbers and in many varieties are seen in the exhibit. All are oranmented with figures woven in when the basket was made.

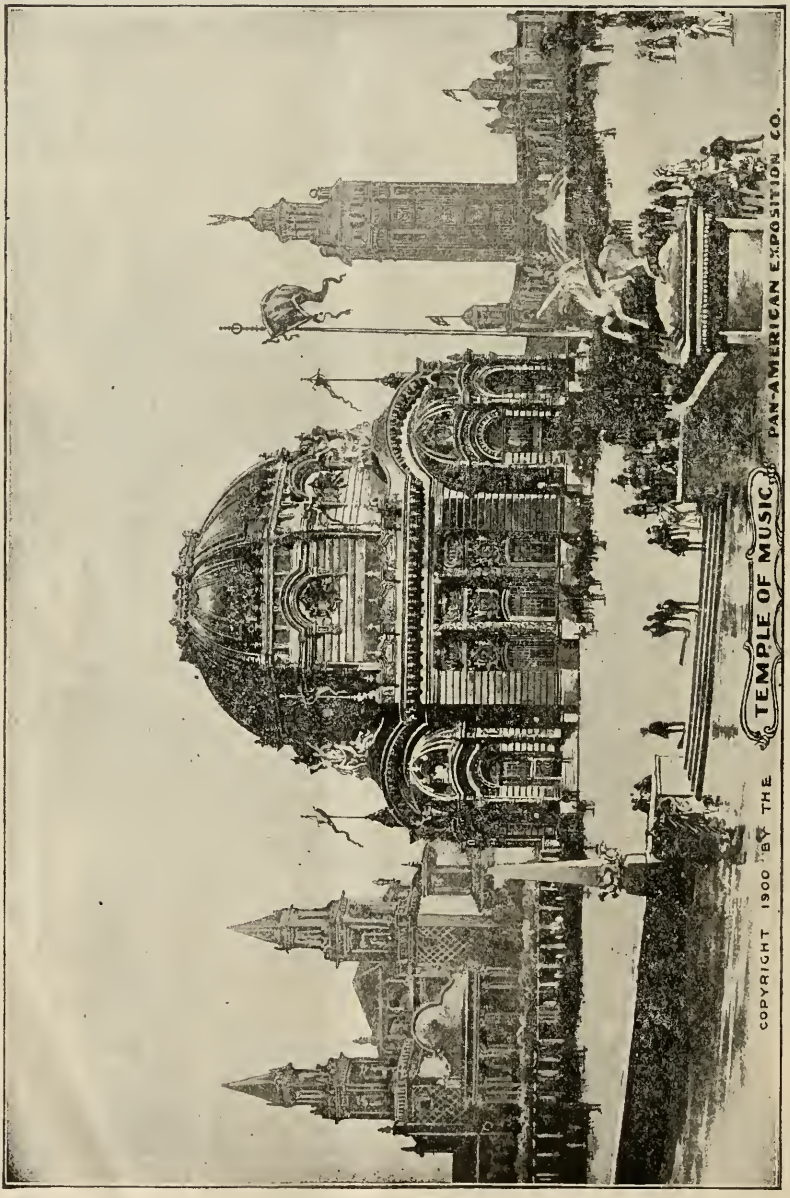
The Pima Indians are those most famous for basket making. They even used baskets for cooking utensils, covering them with a thin layer of clay to keep them from being destroyed by contact with the fire.

An instructive exhibit of flint implements from Mill Creek, Union County Ill., occupies five cases in the balcony of the Ethnology building of the Pan-American Exposition. Rough pieces of flint are shown in different stages of completeness, and incompleteness. On the left a number of blocks of flint are shown, and, as one walks along the line of cases, he sees the various implements assuming a more nearly finished condition, and finally the complete flint spade, hammer, axe, knife, or whatever domestic or agricultural implement the crude work produced.

In working the rough tools a stone bearing some resemblance to the shape the implement is to assume is usually selected to save labor in chipping and flaking the rough block.

Many of the implements are extremely crude, being hardly more than flat stones used, probably, in excavating; and round hard stones used in pounding and flaking the larger pieces of flint. Many of the stone spades and axes, however, are chipped down to a remarkable degree of thinness and must have made very effective tools.

The Florida exhibit of sponges in the Horticultural Building of the Pan-American Exposition, interests all who enter this palace of wonders. This is an important industry in that state and should be developed. Mr. T. M. Wier of Tampa, the Commissioner from Florida, says: "The Florida sponges are of many varieties, differing in commercial value from $2 00 to a great many dollars per pound. It is one of the largest industries in the state, more than 100 vessels being engaged solely in this trade. The business is carried on almost entirely by negroes. It is not an uncommon sight to see a vessel's captain and all of the crew composed of colored men. The sponges are gathered by means of a long pole with a hook attached to the lower end with which the sponge fisherman is very expert. He lies prone upon his stomach in the stern of a boat looking through an ordinary water bucket with a glass bottom, which does away with the glare from the water and allows him to survey the bottom leisurely while the boatman rows or sculls the boat. A schooner lies at anchor nearby, from which a half dozen or more of these small boats fish, which returns to port when it is loaded or at night, as the case may be. The men all share and share alike of the cargo, the captain receiving a larger portion and the owner of the vessel one-quarter of the profit. Anclote Harbor in Hillsboro County and Key West are the principal sponge stations off the coast of Florida.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So much has been said and printed about Midways and street fairs that it would seem to the casual observer that little more remains to be said. But the more careful student of methods and modes of amusing the public realizes that as long as Midways continue to be popular, so long will there be a large variety of topics to discuss about them. That street fairs are beneficial is no longer questioned.

☞The copies of Bendire's Life Histories of N. A. Birds and Wood's Ornithology of the World offered in July OOLOGIST have been sold.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 9. ALBION, N. Y., SEPTEMBER, 1901. WHOLE NO. 180

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

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183 " " " " Dec., "
190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This Sept. OOLOGIST was issued Aug. 29th. The Oct. issue will be printed on Sept. 20. Copy intended for that issue must be forwarded by return mail.

WANTED.—Parties having large and finely blown sets in series of the commoner species 540, 616, 725, etc., etc., to send lists. Can offer good sets. Also have fine sets 677, lot of M't'd, birds, fine coll pistol to exchange for rare sets. PHILO H. SMITH, JR., Mona House, St.Louis, Mo.

DESIRABLE SINGLE EGGS or pairs, with data, to exchange at even rates for sets, with data. Send list and I will make offer. ERNEST H. SHORT, Rochester, N. Y.

FOR SALE.—The following mounted birds are all O. K. good specimens. Prices at buyer's expense, cheapest way. Send for larger list. A. O. U., No. 3, $1.50; 153, $1.50; 194, $3: 197, $3; 203, $2.50; 214, 75c; 289, $1; 339, $1.50; 498, 50c. J. D. ANTHONY, Waubeck, Iowa.

I HAVE A LOT of first-class western bird skins and a number of first-class eggs in sets to exchange for first-class eastern skins in series. Many common species wanted. A. C. BENT, Taunton, Mass.

EXCHANGE.—Davies Nest and Eggs of N. A. Birds for best offer in sea shells or curios. T. C. METZGER, 16 Gladys St.,Rochester,N.Y.

WANTED.—Iowa Ornithologist, Vol. II, No. 4, Vol. IV, No. 4, and Vol. II of Bendire's Life Histories. Will pay good cash price for above in good condition. WALTON I. MITCHELL, 534 Summit Ave., St. Paul, Minn.

EXCHANGE.—Choice first class sets with full data Royal Tern, Am. Oystercatcher, Willet. Wilson's Plover. Brown Pelican, Clapper Rail,Laughing Gull,Forster's Tern BlackSkimmer, Green Heron, Boat-tail Grackle, Painted Bunting,Indigo Bunting,Yellow-breasted Chat, etc. for A 1 sets with data and large singles. Sets also for sale very cheap. DR. M. T. CLECKLEY, Augusta, Ga. 180

FOR SALE.—Copper Botanizing box, triple nickel, 8x6x20, drop handle, strap attachment, bargain at $2, cost me $5.50. A. J. STODOLA, 649 Blue Island Ave., Chicago, Ill.

WANTED.—To exchange Cal. eggs in sets, Hawaiian and Chinese curiosities, Cal. Indian relics, baskets, etc., for other eggs in sets and Indian arrow and spear heads. Send list and get mine. H. F. DUPREY, 323 Fourth St., Santa Rosa, Calif.

MERRITT TYPEWRITER in good condition to exchange for A-1 mounted birds or mammals, skins, books on birds or good cabinet, or will sell cheap for cash; also live male Nonpareil songster for sale. I also want books and magazines on ornithology. Sets, skins and mounted specimens in exchange for same. W. JENNINGS WIRT, Gaines, Orleans county, N. Y.

FOR SALE.—A-1 sets,with full data, of Royal Tern, 50-3, 50c; Brown Pelican, 20-3, 30c; American Oyster-catcher, 5-3, $1; Willet, 10-4, 50c; Wilson's Plover, 5-3, 40c; Laughing Gull, 50-3, 30c; Clapper Rail, 5-8, 5-9, 5-10, 5-11, 5-12, 5c egg; Boat-tailed Grackle, 5-4, 40c; Painted Bunting, 5-4, 40c; Yellow-breasted Chat, 5-4, 20c; Black Skimmer, 10-4, 20c; postage extra. DR. M. T. CLECKLEY, Augusta, Ga. 182

FOR SALE OR EXCHANGE.—A fine lot of eggs and skins, collected by myself last June in north-west Canada; also photographs of bird's nests of Little Brown Crane, Marbled Godwit, Wilson's Snipe, Northern Phalarope, Semipalmated Plover, Bairds' Sparrow, several species Grebes and Ducks' nests, etc. Photographs 15 cts. each, unmounted, or 2 doz. kinds for $3. W. RAINE, Kew Beach, Toronto, Canada.

I have only room for one testimonial here:

"July 12, 1901.

"The photos are simply elegant. I want one of every set (in situ.)

"G. ABBOTT,
"Chicago, Ill."

Large Timber Wolf Skins for Mounting, with skull and leg bones, weighed 100 lbs. and measured 6 ft 8 in., $10; Elk Head, small, 4 point antlers, prettily mounted, $15; Deer Head, long neck, $7; Moose, $30; few sets of dropped Antlers of Elk and Deer, from 50c to $3 each. CHRIS. P. FORGE, Carman, Man.

FOR EXCHANGE.—Fine singles of Hawks, Gulls, etc.; also rare United States stamps, books on birds, papers and novels. Desire common sets. HARRY KOFAHL, Austin, Texas.

WE HAVE reliable formulae to exchange for anything in stamps, minerals, coins, shells, birds' eggs, relics, curios, etc. List free. HATSU MFG. CO., Fitchburg, Mass.

MOUNTED BIRDS, ETC.—2 Loons, breeding plumage, $5 each; one Golden Eagle, $; Snowy Owl, nearly white, $5; spotted and large, $3; W. Great-horned Owl, $3; Sharp-shinned Hawk, $1.50; Ruffed Grouse, $1.50; American Bittern, $1; Sawwhet Owl, $1.25; Lined Coyote Skin rug, $2.50; Eagles' Claws, 10c each; quills, 3c. CHRIS. P. FORGE, Carman, Manitoba.

THE PRIZES for the Collector's Tool Competition have been awarded. Most gratifying results were obtained, showing possibilities of the instrument. Watch for next season's competition. J. R. NOWELL, Portman, S. C.

WANTED.—Pair of Black or Fox Squirrels. Will give good exchange in eggs, curios or cash. H. A. SHAW, Grand Forks, N. Dak.

30 eggs of Rusty Blackbird in sets of from 4 to 7 eggs in a set at 25c per egg, 70 eggs of Short-eared Owl in sets of 4 to 10 eggs each 25c per egg, 100 eggs Col Sharp-tailed Grouse in sets of 9 to 17 eggs each 25c per egg, for one month only. CHRIS P. FORGE, Collector, etc., Carman, Manitoba.

TO EXCHANGE.—A-1 Skins of Swan, Pelican, Eagles, Sandhill Cranes, Wood Ibis, etc., for a-1 sets of eggs. J. CLAIRE WOOD, 196 Randolph St., Detroit, Michigan.

ORDERS TAKEN for Game Heads, Wolf Skins, Fresh Skins of Birds and Birds in Meat, Antlers, etc., for winter delivery. CHRIS. P. FORGE, Taxidermist and Collector, Carman, Man.

WANTED.—A-1 sets. Can offer Snapping Turtle 1 9, 1-20, 3-21, 1-25, value 10 cents per egg. Mounted Snowy Owl and Wood Duck, Fancy Pigeons, Revolver and Cash. JAMES O. JOHNSON, Southington, Conn.

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WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

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WANTED.—Nice sets of Red-shouldered and Red-tailed Hawk, Screech Owl, Field Plover and many other kinds. I will pay $1. each, for well marked eggs of Broad-winged Hawk, and 35 cts. for Osprey's eggs in sets. W. RAINE, Kew Beach, Toronto, Canada.

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THE OÖLOGIST.

VOL. XVIII. NO. 9. ALBION, N. Y., SEPTEMBER, 1901. WHOLE NO. 180

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

Nesting Habits of the Broad-tailed Hummingbird.

The nesting habits of the Broad-tailed Hummingbird, while, perhaps, not unlike those of the Ruby-throat, are at least worthy of note in its peculiarities.

It is a common breeding bird in this locality, often noticing the male in its bright colors and sharp whistling aerial flights; the female humming, nest building and feeding.

One peculiar trait of the male bird is its manner of flight during the breeding season. As the female is occupied in nest building, incubating, etc., her mate enjoys the time in sporting, rising by short, sharp flights to a height at which it is seen with difficulty and it returns to earth with a plunge, terminating in a miniature booming sound, not unlike that of the Nightnawk. Rising again as before and repeating until the little thing seems exhausted and alights on a bush or twig to rest.

The sharp chattering or screeching note uttered during its flight is a peculiarity of the male only and from close observation I believe it to be made by the wings of the bird.

The first nest that I ever saw was built under a bridge and attached to a knot on a small stick, one end of which was held firmly between the planks.

Numerous nests of this species have been observed during the past few years since the one above noted, and all, with one exception, were saddled upon dead branches of oak saplings close to the tree-trunk.

The first nest noticed in '97 was discovered by seeing the female carrying material for its construction. Its position was on a dead stubby branch, close to and under the body of a leaning oak seven feet from the ground and protected from sun and rain by the body of the tree.

One egg was deposited and covered by the down in the bottom of the nest.

As I placed my fingers in the nest, the egg was crushed and the bird had abandoned it. A few days later another nest was found nearby containing a rotten egg in a position no different than the former, but at a height of twelve feet above ground. As this was July the second nest found was, undoubtedly, the first of the nests built by the birds.

On May 25, 1898, a female was observed building her nest in the same clump of trees, the situation being in no wise different from the two nests above described eight feet above ground.

On June 3d the nest and two eggs were collected, but by the 18th another nest with eggs were found only a few feet away from tne place where the first nest was found. The height, position and protection by the tree-trunk were very much the same as in former nests noticed.

The female was caught from the nest and identity made certain in this instance, after which she was given her freedom.

Two exceptions to the above have been noticed where the nests were placed on a forked branch of the oak, one to two feet out.

One nest observed differing from all others seen is worthy of mention; while as a general thing the nests are covered with lichens, this one contained an abundant supply of moss woven into the exterior and no lichens.

The female is not easily noticed by one not familiar with Hummingbirds, as she quietly hums from flower to flower, the humming of her wings being heard but a few feet away.

P. L. JONES,
Beulah, Colo.

The Food Supply of the Baltimore Oriole.

To the enthusiastic working ornithologist there is not a subject of more interest than that of food supply; for other things being equal, this governs to a large extent, the geographical distribution of the various species. Important as the subject is, however, it is one which is overlooked by a large number of the rank and file of bird students, who, while interested, do not devote the time they should to this most important division of the study, but content themselves with reading what others have written. For myself, I would rather toil a whole season without other result than to establish a hitherto unknown point, than to add a thousand skins to my collection and learn nothing.

Let us consider as a start, six of our birds which we are constantly meeting with during the spring and summer months, viz: Baltimore Oriole (*Icterus galbula*), Catbird (*Galeoscoptes carolienensis*), House Wren (*Troglodytes aedon*), Meadow Lark (*Sturnella magna*), and the Mockingbird (*Mimus polyglottos*).

The Baltimore Oriole is so well and so favorably known about the land by his various names of Golden Robin, Hang Bird, etc., that it may seem somewhat out of place to consider him, but the food habits of this interesting creature are fully as beneficial as the plumage and song are pleasing, and where ever this "flash of ornithological flame" chooses to build its pendulous abode, it is as safe as the nest of the Stork on the roof of the Hollander.

The habitat of the Oriole extends throughout the eastern United States north of Virginia, and at times somewhat south of there. In the Mississippi valley, however, it reaches farther south than on the Coast. In New England it is especially abundant, and extends west over the wooded portions of the great plains, and is finally replaced by its brother in appearance, Bullock's Oriole (*I. bullocki*). Here in New England we look for him with the bursting apple tree buds, about the 15th to the 30th of May, and westerly he is often seen as early as the middle of April. Climatic

conditions affect him little, directly, except as far as his food is concerned, and as this consists largely of the insects that live in the foliage of trees, the arrival of *I. galbula* is postponed until they have become plentiful.

It begins its southern migration about the second week in August, and by the first week in October we look in vain for the beautiful flash of color so frequently seen but a few short weeks since.

I took one specimen at Woods Hole, Mass., on the 2d of November, but have seen none later, although the capture of one as late as Nov. 16th is recorded from Conn. By this date, however, ordinarilly, nothing but the deserted nest, swinging from the leafless bough, as the bleak November blast howls among the trees, tells of the occurence of *I. galbula* in that locality. The winter is spent in the warm southern countries beyond the U. S. border.

The present paper on the food supply is confined to the results reached from the examination of eighty-six stomachs, from birds taken from ten states, and covering a range from Mass., westward, to North Dakota, and were taken from April 10th to Sept. 3d, inclusive. The gross contents of these stomachs may be stated relatively, as follows: Animal matter (principally caterpillars and beetles), 72.5; vegetable matter (principally wild fruit), 12.; mineral matter (not food and can therefore be eliminated) 16.4; the additional 9 per cent. being water and mixed gastric juices.

From the reports received from western points, it appears that the largest amount of insect food was found in those stomachs examined from May 1st to June 20th, averaging between these dates about 87 per cent. of the whole contents. The minimum amount of insect food was found in those stomachs examined in April and July, when it was found to be only about 65 per cent. Caterpillars were by far the most abundant insect: in fact during the time when these insects were most plentiful there was scarcely any other insect to be found in the stomach.

A general average between the caterpillars and beetles in the stomachs examined, would give as a result caterpillars 30 per cent., beetles 22 per cent., and the other stomach contents making up the balance.

The caterpillars were found to be more numerous in the stomachs after the 1st of July than before, owing, no doubt, to the increased supply of these insects. Beetles are the article of food next pleasing to the Oriole palate, and though only eaten during May, June and July, the click or snapping beetles (*Elateridae*) constituted nearly 10 per cent. of the food for these months. This seems a trifle strange from the fact that the hard shells of these beetles render them seemingly undesirable articles of diet. However, let us not dispute the good intentions of *I galbula,* for these beetles, together with their larve, the "wire worms," are among the most destructive to the products of the farmer, and as there are over 500 species of snapping beetles in North America, any aid in their destruction should be gladly welcomed by him.

Among the other beetles used by this bird for food are the May beetles, (*Scarabaeidae*) the dung beetles (*Aphodius*) and several of the leaf-eating beetles (*Dichelonycha*). Among this latter, the striped squash beetle, (*E. vittata*) which in the larval state bores at the roots of squashes and cucumbers, and in the mature state feeds upon the leaves, may be mentioned. *Odontola dorsalis* and *O. rubra*, which feed on the leaves of the juniper and apple, respectively, and at times ruin these trees, are also a favorite with the Oriole. The Snout beetles or weevils (*Rhyncophora*) are also taken by this bird in small quantities. The *Caribidae* or cannibal beetles, which feed for the most part on the injurious in-

sects, do not form an appreciable article of diet for the Oriole, and it would seem that as both are intent upon a common purpose, the Oriole passes over this beetle without disturbing it.

Wasps, (*Hymenoptera*) bugs, (*Hemiptera*) among the latter being many of the stink bugs, (*Pentalomidae*) the assassin bugs, (*Reduvinidae*) which feed on other insects, the scale lice (*Coccidae*) and the common plant lice (*Aphidae*); the two latter being among the most destructive insects known. Flies (*Diptera*) are also common food, the larvae of the March fly (*Bibio*) being greatly in evidence. During the months of June, July and August, the grasshoppers and locusts were found in the proportions of 2, 10 and 12 per cent., respectively. Spiders also constitute a favorite article of diet, and gradually increases to nearly 10 per cent. of the animal food in August.

The vegetable diet of the Oriole consists almost entirely of fruit, but seeds and grain are sometimes taken. The favorite fruits are cherries, raspberries, blackberries, mulberries and juneberries.

The examination of these stomachs has shown that this bird is a great insect destroyer; that it destroys immense numbers of caterpillars, grasshoppers, bugs and noxious beetles and does not prey upon the predacious or useful insects. Let, then, the farmer continue to hold his good opinion of this beautiful bird and accord it the protection it deserves.

C. C. PURDUM, M. D.

"Some Twice Occupied Nests."

After reading the article by Mr. Richard F. Miller, Philadelphia, Pa., in the August OOLOGIST, under this heading, I thought, perhaps, my experiences in that line would not come amiss.

April 16, 1897, collected a set of three Phoebe eggs. Nest placed on a beam under a large covered bridge In collecting I had to remove the nest, which I replaced on the beam, but there was another beam that crossed beam No. 1 and it was on the other side of No. 2 that I placed the nest. This was not in its original position. A beam separated the two positions.

May 15 1897, I returned to the bridge and found the nest gone from where I had placed it, but there was a nest in the place where I had found the one on April 16. There had not been water high enough to carry the nest away. Did the birds tear the old one apart and rebuild it in the old position? I think, undoubtedly, that they did, although they would have to carry the material past an 8-inch beam. Near Arden Sta., W. Co., Pa.

May 25, 1897, collected one set of seven eggs of the Flicker from a hole in the limb of an apple tree in an orchard.

June 5, 1897, I returned to the Flicker hole, from which I collected the set on May 25, and collected another set of seven eggs. Near Washington, Pa.

June 18, 1898, collected a set of three eggs of the Kingbird from a nest fifteen feet high in an apple tree in an orchard near Tarkio, Mo.

June 23, 1898, I found a pair of Mourning Doves had taken possession of the Kingbird nest, from which I collected the set on the 23d inst. They relined it with a few straws placed in the bottom. I noticed that although the Doves built a nest for the first set, for the second and third they always took a deserted Robin, Kingbird or Blue Jay's nest and placed a few sticks or straws (generally the latter) in the bottom and proceeded with incubation.

June 15, 1900, collected one set of five eggs of the Barn Swallow. I also took the nest, situated on a beam of a small bridge over a run.

July 10, 1900, I found that the Swallows, from which I took the set of five eggs on June 15, had built a new nest

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on the same spot as the former one, and had four eggs. Near Tarkio, Mo

June 18, 1900, collected one set of five eggs of the Red-headed Woodpecker in a hole in a maple tree in a grove beside the house on a ranch some three miles from town.

June 29, 1900, collected one set of five eggs of the Red-headed Woodpecker from the same hole as the set of the 18th inst.

July 10, 1900, collected one set of four eggs of the Red-headed Woodpecker from the same hole as sets of June 18 and 29.

I have found that the Red-headed Woodpecker will do this every time, and the third set generally, if not always, consists of four eggs. Near Tarkio, N. W., Mo,

April 19, 1901, collected one set of five eggs of the Phoebe from a nest on a beam under a bridge. (This is the same bridge situated on the same place on the same beam as were the sets of April 16 and May 16, 1897.) I replaced this nest, but it was carried away two days later by high water.

June 8, 1901, collected one set of five eggs and nest of the Phoebe in the same bridge and on the same place on the beam as the set of April 19, 1901. Four eggs out of this set (June 8) were spotted, two heavily around the large end. The eggs in the set of April 19 were unspotted.

May 16, 1901, collected one set of four eggs of the Red-winged Blackbird Nest situated six and one-half feet high in a small willow in a creek bottom.

May 30, 1901, while passing the Red-wing's nest, found the 16th inst., with a friend, was more surprised to see an Am. Robin sitting on the nest. On examination we found the nest contained one egg and the Robin had relined it with grasses and built the side up about one-half inch with mud and grass. Several days later I was passing and I called on Mrs. *Merula migratoria* and found her at home. The nest contained four eggs, which I photographed and left.

May 30, 1901, collected one set of five eggs of the Red-winged Blackbird. My friend, who was with me, also collected a set of five Red-wings. I enclose you a photo of same. These are the only sets of five eggs of the Red-wing which have come under my notice. The eggs in both sets were rather smaller than the average Red-wing eggs and rather sperical. Both sets are well marked with sploches and streaks of black.

Before I close I wish to thank Mr. Geo. W. Vosburgh, Columbus, Wis , for the paragraph in July OOLOGIST where he mentions about "The Chicago Record-Herald," Audubon series of colored photographs. It has been the means of selling more than one "Record-Herald" here.

E. R. FORREST,
Washington, Pa.

How Some Birds Capture Their Prey.

(Continued from August Number.)

Among the regularly insectivorous birds the Whip-poor-will swallows the largest insects of all; frequently engulfing large moths and beetles the size of the june bug. In one bird that I dissected there were over thirty insects, many of which I could identify. They were of several species and embraced beetles, moths and a few dipterous insects. While the two Goat-suckers known in the great lake region, the Whip-poor-will and Night Hawk, or Bull Bat, as it is sometimes called, feed upon the larger insects, the Chimney Swift only captures the smaller species, relying mainly on the small two-winged insects, flies, 'squitoes and gnats. The former birds dash upon their prey in plunges and side-flops, while the Swift engulfs its food as it rapidly revolves. The flight and capture are quite similar

in the movements of the Whip-poor-will and Night Hawk when the two birds are feeding, but the sustained flight of the latter is quite different in the open from the more curtailed wing movements of the former in the woods. I have but rarely seen the Whip-poor-will flying and feeding in the day time, though they sometimes do so in the nesting season, and I once shot a specimen which had a crop full of plunder. The Night Hawk is a well known feeder during the daylight hours while the young are small and I have seen the old birds feeding and shrieking their skeet as early as two o'clock p. m. But I have never seen this habit of feeding in broad daylight except when they had young. The Night Hawk sometimes runs, or more properly, waddles about on the ground in quest of food, and I have seen an old bird gobble a black cricket in broad daylight. Once the observance of a rare sight was afforded me in a partial clearing, where I beheld an old Night Hawk feeding its one young one. This was in the day time and the old bird flew close to the nest and then scuttled to the little one, which was a fluffy bit of down, with closed eyes. The old bird placed its bill within the mouth of its offspring and apparently regurgitated the food for the young. This act was repeated three times in the space of a half minute, after which the old bird closed its eyes and both remained quiet on the ground. I have repeatedly seen the same act performed by the Chimney Swift on a nest in the gable of the barn where they have nested continuously for over thirty years.

From close observation I am led to think that nearly all insect-feeding, as well as many other birds, feed their young in this manner. The Ruby-throated Hummer is another species which macerates its food before feeding its very young, and when offering them delicacies, as honey and insects, thrusts its long beak way down the throats of the nestlings, in an apparently aimless manner, but evidently to the liking of the midgets in the nest. The rapidity of movement in the Hummer is remarkable and they could make good flycatchers were it necessary. They sometimes catch flies upon the wing and I have seen them dart at motes and specks in the air in sheer sport as the trout snaps at specks in the water from mere wantonness.

The question of food of the Hummer has been much discussed and the idea generally prevails that the Ruby-throat visits the flowers for the insects that are attracted by the honey in the flowers. This question shall be discussed in another chapter. Suffice it to say that in my opinion the Hummer makes the same use of the honey from the flowers that the Sap-sucker gets from the sap of the perforated bark.

The Flycatchers are exponents of the art of lightning dash and perform in a small way on the insects the same line of work that the Falcons follow with the birds as prey. Some, as the small Green-crested, prefer the dark woods where they are found catching the small dipterous insects, while the larger species are more open in their depredations and I have repeatedly seen the Kingbird capture, dissect and devour the harvest flies. The most rangy insect that I have seen a Flycatcher capture was a dragon fly, the giant *libelula*. The insect knew its danger and sought to evade its destroyer by flying in a small circle and at a very rapid rate. The intelligent insect used excellent judgment and foiled the persistent tryant for several seconds. Round and round they went and the bird did not gain an inch on the devil's darning needle, as we boys used to call these gauze-winged insects, and I was wondering if this reasoning creature could manage to get away from its fierce enemy, when suddenly the Flycatcher dashed across the

circle nearly diametrically and caught the unlucky spindle amidships.

Kingbirds do not confine their efforts to air captures, but often plunge at a grasshopper on the ground. They also eat bees and are known as Bee Martins. I once observed a Great-crested Flycatcher eating a hornet, which it had captured from the neighborhood of a paper hornet's nest in the woods. Still I do not think that many bees are caught from the hives of the domestic bees.

It is not uncommon for the Barn-yard Phœbe to feed from the ground, while I have seen one perch for a moment on the back of a sheep, which caused me to think that this bird ate the ticks after the manner of the Cowbird. All the Flycatchers are our friends and should be protected.

The Titlark and Horned Lark feed from the ground and though they are very fair fliers and indulge in many variations in flight at times, still they are ground feeders and do not show off in the capture of their prey. The Crows are very prosaic in the capture of their prey, which in the nature of insects mainly consists of grasshoppers, which are caught upon the ground. Bobolinks and all Blackbirds feed upon ground insects and seed mainly, and like most of the singers are not interesting nor dashing in the capture of their food. Among the Sparrows we have few exponents of the art of capturing food on the wing. I have seen the Chipping Sparrow seize a small moth while flying and have observed the same proceeding in the case of a few others of the family, but all of our Sparrows are surpassed in insect capture by that interloper, the European House Sparrow, which is a most persistent feeder upon insects at certain seasons and which it catches on the wing at times with considerable skill.

MORRIS GIBBS, M. D.

(To be Continued.)

Jottings.

On May 7th Mr. John Rittenberg secured a male specimen of the Cape May Warbler, *Dendroica tigrina*, and brought the same to our office, where it still remains, for identification. This species is a very rare migrant in Orleans County.

W. Raine of Toronto spent the past collecting season in Assinaboia and has returned with photo, nest, eggs, young in down and skin of parent bird of the Little Brown Crane (*Grus canadensis*)—valuable additions to his unique series of this species.

Mr. Delos Hatch of Oakfield, Wis., an old-time naturalist and collector, writes that he has a live and pretty specimen of the White Gopher (Albino Striped Ground Squirrel).

In a letter dated July 26, from Mr. D. H. Haight, who is summering in Hamilton County, N. Y., and who had an article in the January, 1899, OOLOGIST on "Nesting of the Duck Hawk in Hamilton County, New York." He writes:

"Remember those Duck Hawks I wrote you about once? Well, a pair has raised a brood in exactly the same place again this year. Probably the young of the pair we shot. This morning I was up on the ledge and within twenty feet of them—the old birds and four young just well able to fly. I left them undisturbed, although I could have bagged the lot. They will undoubtedly nest here next year again.

"It would be a great chance for some museum if they wanted to get up a case of this rare Hawk, also noted a Cardinal Grosbeak here. Never heard of one so far north before. Probably followed the Hudson River valley up and thus strayed up here."

In a letter of recent date Ernest Shillabeer, secretary and director general

of the Junior World's Exposition to be held at Dayton, O., in September, a more extended notice of which we give in other columns, writes:

"I enclose a slip advising you of an exposition to be held in this association Sept. 9th to 21st, inclusive. It is gotten up by boys under my supervision, and is purely educational. It will be very extensive. We have already received exhibits from Russia, Jamaica, France, New Zealand and many states. Nearly every country and state will be represented. We expect 10,000 people in the two weeks. The boys would appreciate an exhibit from you of such things as you would care to send. It should reach us by Aug. 25th, so that we can put it in the catalogue, which will be a souvenier and 10,000 issued.

Mr. Philip Laurent of Philadelphia, to whom we recently sent specimens of the Great Gray and Hawk Owls, which were obtained during the winter of '95-'96, from Red Deer River country, Alberta, and for which we could furnish no further data, writes amply, timely and tersely as follows:

"I am sorry that you can't give me a little more data concerning the two Owls. I have nothing to complain of as regards the mounting of the two specimens, although I think I could have done a little better work with the Great Gray. In my opinion, the man who collects a bird skin as rare as the Great Gray Owl or the Hawk Owl, and does not take down full data (sex by dissection, such measurements as can not be well taken from a dry skin; as well as determining the contents of the stomach, locality and date of capture) should have at least three months in jail. There are quite a few ornithologists whom it would pay to visit some of the active "field entomologists" of Philadelphia, and see with what care they label their specimens. An insect without exact locality and date of capture loses half its value in the eyes of a Philadelphia entomologist. The ornithologist or entomologist who collects specimens without keeping at least locality and date of capture is a back number."

The booklet sent out by Mr. Silas H. Paine of the Silver Bay Hotel, Silver Bay, N. Y., mentions "three unique attractions," which ought to make Silver Bay headquarters for the naturalist and collector when in the Lake George region.

"The flora of Lake George:—Nature study is becoming very popular. No better place can be found for it than the shores of Lake George. It is wonderfully rich in wild flowers, ferns and mosses. A lady guest of the Silver Bay Hotel, arriving on the noon boat, found over fifty varieties of wild flowers that afternoon.

"A large room has been devoted to a collection of 'The flora of Lake George' —not pressed in books in the old-fashioned way—but placed in frames, like pictures, along the walls, where they can be easily examined and studied.

"The fauna of Lake George:—A whole building is devoted to a rare collection of the birds and animals to be found in this region, nearly 300 specimens, each bird with its nest and eggs and young, surrounded by the foliage in which it makes its home, and each animal in the same way—in its natural surroundings. This work has been done by a skillful naturalist and is of great interest, not only to the student, but to all lovers of birds and animals.

"The history of Lake George:—There is no spot of equal length in America that has been so many times fought over as the shores of Lake George. The relics of these old wars—arrowheads, spears, tomahawks, cannon balls, bayonets, muskets and all the paraphernalia of the camp and battlefield—are turned up by the plow, or fished up from the bottom of the lake. Two rooms have been devoted to a collection of these historical relics and the portraits of the French, English, Indian and American soldiers who have fought here.

With these collections are also gathered the books pertaining to them, so that the amateur and the student can find all the helps necessary for their use."

New Books.

THE HOME LIFE OF WILD BIRDS. A new method of the Study and Photography of Birds. By Francis H. Herrick, G. P. Putnam's Sons, New York, 4to, cloth, gilt top, 168p, with 141 illustrations from original photographs from nature by the author, $2.50 net.

This is unquestionably one of the most valuable "Bird Books" of the year, not only for the working bird student, but will be equally prized by the amateur, the "Audubonian" and the scientific and exclusive A. O. U. man. A most happy combination: A necessity, elegant for presentation purposes, unsurpassed for the bird lover's parlor table. The market has been flooded with "bird books" and yet the publishers of this volume claim a place for it at the fore-front of such publications; it admits of no competitor: all this because of the fact that Mr. Herrick has perfected an invention that brings the birds beneath his eye, and beneath the eye of his camera, in a way hitherto unheard of. At an actual distance of about two feet from the nest, the author and his camera stand. From that point of vantage they watch and record every movement of the bird family The domestic economy of nest life becomes a practical science, to be set down on paper by pen and picture for the practical needs of the scientist and for the delight of the lay lover of nature.

THE WOODPECKERS. By Fannie Hardy Eckstorm, Houghton, Mifflin and Company, Boston. Illustrated with five colored plates by Louis Agassiz Fuertes and 21 drawings by John L. Ridgway, square 12mo, 140p, $1.00.

A comprehensive account of a single family of birds distributed throughout North America; accurate and orderly, yet written so as to stimulate original observation and intelligent study among young people. The author has made an exhaustive study of the structure and habits of the Woodpecker and of his tools—bill, foot, tongue, and tail—concluding that he is a miner instead of a carpenter as generally supposed. The book is informing in contents and animated in style, and is certain to interest boys and girls in the study of bird life on their own account.

EVERYDAY BIRDS. Elementary Studies. By Bradford Torrey, Houghton, Mifflin and Company, Boston. Illustrated with 12 colored plates from Audubon and 2 from photographs, square 12mo, 112p, $1.00.

"Everyday Birds" is a collection of sketches of a number of well-known birds, some biographical, and others general, in character. The volume is really an interesting bird-study book, written in a manner to interest children and older people in birds and bird-life. The illustrations include twelve colored plates from Audubon—the first considerable reproduction of the colored drawings from the "Birds" of that author. Mr. Torrey combines entire scientific accuracy with much literary charm, and readers of all ages will find it delightfully interesting.

BIRD DAY, HOW TO PREPARE FOR IT. By Charles A. Babcock, L. L. B., Silver, Burdett & Company, New York, square 12mo, cloth, 96p, 16 page illustrations of common birds, 50c.

As the author states: "The aim of this book is to assist school children in the accurate study of a few birds. It is believed that if this be attained, further study of birds will take care of itself." It contains chapters on History of the Movement of "Bird Day," The Value of Birds, The Destruction of Birds, Plan of Study, Further Suggestions, Directions for Written Work, Programs for Bird Day, The Poets and the Birds, Objects and Results of Bird Day, and Some Representative Birds, (notes, descriptions and illustrations of sixteen common species.)

TABBY'S DEFENSE. By Harriet Elliot, Abbey Press, New York, illustrated, cloth, 12mo, 42p, 50c.

The autobiography of a cat told in simple language with a view to enlisting the sympathy of children on behalf

of dumb animals, and helping them to realize the responsibility which the human race incurred when they received the Divine commission to rule over the animal world by mercy, and not by aggression. The interest of the story is enhanced by illustrations depicting the various scenes of trial and prosperity which Tabby describes.

BOBTAIL DIXIE. By Abbie N. Smith, Abbey Press, New York, 12mo, 154p, cloth, profusely illustrated, $1.00.

Lovers of dogs (and their name is legion) have a treat in this book. The illustrations which accompany it speak as often and as loudly as the dog himself. The pictures alone are worth more than the price. As the biography of a bow-wow, the book is of great value, while its different teachings with regard to the treatment of animals will find a place in every library and every school. The author is to be congratulated upon the production of a work which is so unique, entertaining and instructive.

CAT TALES IN VERSE. By Elliot Walker, Abbey Press, New York, 8vo, 48p, daintily bound in cloth, 50c.

The multitudious friends (young and old) of cats will welcome in this book an absolutely new thing under the sun. Here they will find the *mioaus* of their favorites set in rhyme. Owners of cats and these feline animals themselves owe the author, Mr. Elliot Walker, a unanimous vote of thanks. The verses are unique and admirably done. The cover is designed by Mr. C. H. Rowe and is very characteristic. Many of these rhymes are of a high order of merit. None of them are mere jingles. There are both wit and wisdom in the lines.

EXPOSITION COMPLETE

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These statements are made on the authority of the Exposition officials with a view of counteracting as far as possible false and misleading reports which have gained currency in certain localities.

Hundreds of thousands of fair-minded appreciative people have visited the Exposition and returned to their homes delighted with the show and their accommodations. Their words of commendation will go far toward correcting the evil. No other exposition has offered so many fine attractions Never before has human interest been so graciously catered to. The illumination is the grandest and most inspiring spectacle ever produced by the genius of man. Bathed in incandescent radiance the Rainbow City posesses a beauty exceeding that of fairyland, a loveliness beyond expression.

By day the scene is one never to be forgotten. Unequal is the most fanciful pen to an adequate description of the magnificent architecture and beautiful coloring of the palaces, grand sculpture, cooling fountains, smiling lakes, wealth of flora, waving foliage and grass covered glades, delightful vistas, and rising high above all else—its pinnacle piercing the low-lying clouds—a tower of graceful proportions and amazing splendor, upon and about which the newest and grandest ideas of genius are fittingly exploited.

Mr. Arthur C. Pearson, the well-known publisher of newspapers and periodicals of London, Eng., who recently visited the Exposition, said: "I much enjoyed my day at the Exposition, which struck me as being very fine. The lighting effects at night are simply marvelous. I never saw anything like them, which is hardly to be wondered at as there has never been anything like them to be seen."

Here are the expressions of a number of distinguished Americans:

United States Senator Thomas C. Platt of New York: "It is wonderful, very wonderful."

Secretary of War Elihu Root: "It is a splendid exposition, worthy of being seen by the whole world."

Governor Richard Yates of Illinois: "If Paradise has anything more beautiful than the Pan-American Exposition has when illuminated, I can't conceive of it."

Passing from the enchanted courts into the splendid palaces one reads in the comprehensive exhibits the story of development and progress in the New World during the Nineteenth Century, vast discovery, stupendous invention, marvelous advancement, which constitute an example never before furnished in the revolution of time.

Buffalo is amply prepared to accommodate all who come to the Exposition. The rates are reasonable. The report that the hotels are charging $5 to $10 a day for single rooms is uttery absurd. These charges are for magnificent suites with extraordinary conveniences at one or two hotels. There are scores of hotels where the charges for rooms are $1 to $2 per day. At the mammoth hotels near the Exposition the charge for lodging, breakfast and evening dinner is but $2 50 and $2 a day. The charges at downtown hotels are as reasonable.

There are upwards of 200 hotels in Buffalo, with accommodations for 45, 000 people. There are 650 boarding boarding and rooming houses, accommodating 18,500. More than 10,000 householders have opened their homes and will provide accommodations for more than 100,000. The rates are 50c to $2 per day.

In a majority of the boarding houses and at many private houses lodging and breakfast are to be had for $1.00.

To sum up the situation, Buffalo and its environs are capable of accommodating nearly a quarter of a million visitors in a comfortable manner and at rearonable rates.

It is well when convenient for the intending visitor to make arrangements for accommodations in advance. The Pan-American Official Bureau of Information, 213 Ellicott Square, Buffalo, will furnish all necessary information, including lists of places where lodgings may be engaged, with prices, and a list of reliable rooming agencies and fraternal order's information bureaus.

There are plenty of restaurants where good service is given at reasonable prices. There are places on the Midway where a good lunch can be had for 20 cents and a satisfactory dinner for 35 cents.

Admission to all the exhibits buildings of the Exposition is free. In this group are included the great Government, Machinery and Liberal Arts, Electricity, Fine Arts, Horticultural, Mines, Graphic Arts, Ordinance, Agricultural and Heavy Railway Exhibits Building, in which the visitor might spend with profit to himself several days. The great Stadium in which sports are held daily, is also free.

Nowhere before have so many meritorious attractions been offered for the sum of 50 cents for adults and 25 cents for children as at the Pan-American Exposition. These include, daily concerts by the best bands on the Western Hemisphere, organ recitals by the leading organists of the United States, and drills by United States Marines, U. S. Heavy Artillery, U. S. Life Saving Corps, and U. S. Hospital Corps. There are grand displays of fireworks on special days.

ELBERT L. LEWIS.

A NOVELTY!

In the way of International Expositions. Boys Imitate Their Elders in an Interesting Enterprise.

Dayton, Ohio to be the site of a Display of the Products of many States and Countries.

The "Juniors" of the Dayton, Ohio, Young Men's Christian Association have inaugurated a genuine novelty in the way of Exposition propositions. The boys of all lands, and their older friends, are invited to contribute specimens of the natural products of their respective neighborhoods for exhibition at Dayton during two weeks in September.

The responses have been so generous that this Junior World's Exposition scheme has outgrown the original thought of the youthful promoters, and is becoming quite an extensive affair.

In the beginning an Exposition company was formed, the shares selling solely to members of the Dayton Junior Department, an organization of boys

from twelve to seventeen years of age, some three hundred in number. Disposing of the entire capital stock at par, the company organized with a full corps of officers and committees in the most approved fashion. Among the committees for preliminary work are the following: Care of Exhibits—Frank Congdon, Ralph Niedergall, Carl Congdon; Signs and Posters—Julius Tafel, Charlie Wilson; Photographs — Robert Pape; Decoration—Everson Welliver, George Ohmart; Correspondence—Carl Starkey, Frank Hale. This last committee is receiving much assistance from one of the local commercial colleges, whose students are furnishing many typewritten letters for the boys. Secretary Ernest Shillabeer, of the Junior Department, is serving as director general.

Upon completing the organization, letters were immediately sent out to many lands, asking for grasses, leaves, shells and similar specimens easily obtainable by a boy. Unthreshed grains, crude spices, nuts and cotton balls, as gathered in forest and field, were solicited, together with minerals and other products of the under-world.

The earlier replies were so cordial, and gave promise of exhibits so far beyond the original expectation of the lads that they have been led to seek a more representative and elaborate collection. All answers received are favorable endorsements of the idea and assurances of hearty cooperation.

The boys of Brussels wrote: "Be assured that we shall do our utmost to let our small Belgium shine in your gigantic America." An ostrich egg mounted on an orange-wood stand has already been received from the famous California farm.

The boys of the Dayton Manual Training School are preparing a beautiful piece of parquetry, consisting of specimens of every obtainable variety of wood native to Ohio. Hazelton, Pa. will exhibit a model coal bunker, showing the manner of handling a natural product. Marseilles will exhibit products of the historic Riviera. Two dozen countries and islands, together with many states of the Union, will be represented, according to the latest returns

This first exhibition of its kind—managed by boys in the interest of boys, —it is hoped will add definitely to the attractiveness of geographical study by the boys of Ohio, many of whom will be privileged to inspect the exhibits. Many other boys, reading of this Dayton effort, may see new interest in the study of places and products, and in distant lands will start small collections or exhibitions in their homes or schools. Practical and fascinating business lessons will be learned by the boys taking this new form of correspondence study under the tutelage of the Dayton managers. The first consideration of the original request and the weighty problems involved, the subsequent correspondence with headquarters in America, the planning necessary to give their respective States and countries creditable showing, the preparation of the exhibit, the study of packing and shipping methods, and the dealings with customs officials, will be of real value to the youngsters, who may some day participate in more ambitious international shows. Then, too, there is a hope that the successful conduct of the affair may direct attention to work for boys among those who have the world's betterment at heart.

A striking educational feature of the Exposition will be a huge map of the world, to be worked out by the Dayton lads. The spices of Ceylon, the tea of China, and the cotton of the South will be mounted on this unique map, together with the characteristic products of other States and nations. "This alone will be worth the price of admission."

The bureau of publicity is offering a series of prizes for posters in water-colors, to be submitted by pupils in the grammar grades of the public schools. These posters may be of any size, shape or design, and shall become the property of the Exposition Company, to be used in advertising the show. The posters entered in the competition will form an interesting preliminary exhibit, to be held during the early summer.

The boy managers propose loaning the World's Exposition intact for exhibition in other cities. In such cases the local Y. M. C. A. or other organized body interested in boys will be favored with the management.

Young people or others desirous of exhibiting specimens in September should address Director-General Junior Junior World's Exposition, Dayton, Ohio, for further particulars.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO

OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 10. ALBION, N. Y., OCTOBER, 1901. WHOLE NO. 181

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants,' "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OOLOGIST. It denotes when your subscription expired or will expire.

No.181 your subscription expires with this issue
183 " " " " Dec., "
190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This Oct. OOLOGIST was issued Oct. 16th. The Nov. issue will be printed on Oct. 30. Copy intended for that issue must be forwarded by return mail.

WANTED:—To exchange, one guitar and case in good order, nearly new [cash price eleven dollars] for bird skins or sea curios. G. A. DECKER, Ludington, Mich.

FOR EXCHANGE:—A collection of Alcoholic Specimens, "Scientifically named" I want arrow points, minerals shells, and U. S. Stamps not in my collection. W. J. ENGLAND, Caro, Mich.

OLD COINS, Stamps, Stamp Papers, a few fine mammal skins with skull and leg bones, etc. to exchange for bird skins and eggs. ALFRED ANDERSON, Box 59, Downs, Kan.

FOR EXCHANGE.—One brand new copy of Apgar's "Birds of U. S." (cost $2.00) for Rowley's Taxidermy in good condition. Address, ROBT. W. GLENN, Wooster, Ohio.

TO EXCHANGE.—Complete volumes of Bird Lore, Condor, Osprey and Mineral Collector, half-dollars of 1806, 1808, 1809, 1811 and 1814, fine condition. Wanted first class sets. E. A. DOOLITTLE Painesville, Ohio.

FOR SALE or EXCHANGE —Capen's Oology of New England, new; 100 Eastern bird skins; 25 mounted small birds; 350 back numbers Oologist, Osprey, Museum, etc.; 800 Philatelic magazines; Gray's botany; Coues Key, third edition. Will sell any of above cheap or exchange for stamps. GEO. D. FRENCH, Ivoryton, Conn.

WANTED.—For cash or exchange. Most any number of The Audubon Magazine, Birds and All Nature or The Taxidermist. Can offer various stamp and curio papers; also some singles of cheaper eggs. HOWARD E. BISHOP, Sayre, Pa.

WANTED for cash. Sets of 325, 332 and 343 or will trade R. P. SHARPLES, West Chester, Pa

FOR SALE.—For best offer in cash. One long Seth Thomas "Grandfather" clock with a revolutionary history, confederate money and bonds. Mrs. M. F. SKEEN. Farmer, N. C.

WILL EXCHANGE fine Mexican opals for seeds or botanical specimens. Send specimens and 25 cents to pay custom house charges and I will send opal by return mail. R. BURNHAM, Box 83, Nogales, Arizona.

TO EXCHANGE.—Arrowheads and coins for eggs in sets, many common varieties wanted. Send lists. J. B. NEWTON, Unionville, Ct.

FOR SALE:—4x5 Hawkeye Camera, 3 plate holders, cost $24; 1 copy British and European Butterflies and Moths, new; 30 colored plates; 165 cigarette and gum pins; 10 campaign pins and buttons; Oologists and Scientific American; 200 or 300 cigarette pictures; 1 baseball mitt. All to be sold for highest *cash* price. FRANK E. STOCKWELL, Lancaster, N. H.

TO EXCHANGE.—A lot of fine bird skins for Bendire's Life History or Capen's Oology. FRED FREY, 428 Decatur St., Sandusky, O.

FOR EXCHANGE in December.—Sets, 86, 133, 273, 294a, 333, 339b 365, 373, 375d, 378, 393d, 394a, 397, 407, 413, 450, 458 727, 710a, 753. Singles, 207, 255, 224, 228, 243, 339b, 373, 402a, 479, 482, 487. Want sets of water birds, Hawks, Grouse, only. CHAS. S. THOMPSON, Paso Robles, Calif.

1000 Arrowpoints and other Indian Relics also 1400 beetles and 100 butterflies in glass cases for sale cheap or will exchange. M. COLDITZ, Allardt, Tenn.

FOR SALE.—Sword Fish's Sword, 35in. long, $1.50; Books, Birds of New Jersey by C. A. Shriner, 35 ill., descriptions of birds, nests and eggs, $1.; Brake up Lake Shore, 50c; Robinson Crusoe, 50c; Porthos, 35c. WM. B. CRISPIN, Salem, N. J.

WANTED:—Knight's Birds of Maine, Davie's Nests and Eggs 5th edition, Skins, Nests and Eggs of Warblers, good exchange or cash. GUY H. BRIGGS, Livermore, Maine.

FOR SALE.—Singles and twos of 319, 320a, 714, 504, 421, 709, 519b and 593b. Five cents and postage per egg, cash with order. R. P. SHARPLES, West Chester, Pa.

HELLO! I have two pairs field glasses, Natural History books mounted specimens and other objects of interest to you. State what you want and what you have H. E. NEUMANN, 204 Rock St., Watertown, Wis.

FOR SALE —A lot of Fine Bird skins cheap, among them I mention Mottled Owl, Short-eared Owl, Rough-legged Hawk, Cedar Waxwing Snowflake and others. FRED FREY, 428 Decateur St, Sandusky, O.

WANTED.—Eggs in sets or singles. Offer Skins, Eggs, Indian Relics, Books, in fact anything in stock. Also want good long spear-heads, skins of waterbirds and sea curios. Send list of what you can spare and let me know what you want. E. H. SHORT, Rochester, N. Y.

TO SECURE opinion of collectors as to the proper cash value of eggs of the Yellow Rail, I offer my two personally taken sets, n8, n10 to highest bidder before January first. Collectors of bird photographs, representing newest and most difficult work, with long tube and anastigmat, will do well to write for list of rare and attractive subjects, enclosing 10c. Photos, 15c each; $1 60 per doz. Lantern slides to order. P. B. PEABODY, Hibbing, Minn.

NOTICE.—I have for exchange "Nests and Eggs of N. A. Birds" by Oliver Davie, fifth edition, new; one Eastman Kodak, 4x5, new, and the best datas on the market. For Davie's book I will accept $5 in complete sets with data. For the Kodak, $25 worth of choice sets with data. And I will send 100 datas to every collector who sends me 50c worth of eggs in sets. Send list of eggs for selection. Satisfaction guaranteed. Address, Box 322, CLARENCE H. LUTHER, Fayetteville, Ark.

FOR SALE.—A-1 sets, with full data, of Royal Tern, 50-3, 50c; Brown Pelican, 20-3, 30c; American Oyster-catcher, 5-3, $1; Willet, 10-4, 50c; Wilson's Plover, 5-3, 40c; Laughing Gull, 50-3, 30c; Clapper Rail, 5-8, 5-9, 5-10, 5-11, 5-12, 5c egg; Boat-tailed Grackle, 5-4, 40c; Painted Bunting, 5-4, 40c; Yellow-breasted Chat, 5-4, 20c; Black Skimmer, 10-4, 20c; postage extra. DR. M. T. CLECKLEY, Augusta, Ga. 182

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrocities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

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FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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The Food Supply of the Catbird.

BY C. C. PURDUM, M. D.

The Catbird (*Galeoscoptes carolinensis*), breeds in the greater part of North America. Its range extending from the Atlantic Seaboard to British Columbia, and from the British Provinces, southward to the southern boundry of the United States. It is found most plentifully in the Transition and Upper Astral Zones of the eastern United States and generallly rears two broods in a season throughout the most of its range.

Although fond of the society of man, in many places it is not appreciated, and is subject to persecution, through the mistaken idea that it is a fruit stealer, as well as for its plaintive feline call. However, examinations of the contents of the stomachs of these birds, show that at least one-half of the fruit that it eats, is wild, and that fully a third of the entire food is composed of insects which are more or less detrimental to the farmers' interest, and which yearly cause heavy losses to the country. The good accomplished in this manner fully counterbalances what harm it does by appropriating a few cherries and strawberries. The reports received from observers in the central states, show that the damage done by catbirds in that locality is much greater than along the seaboard, but when we take into consideration the fact, that in the central part of the United States, wild fruits are much more scarce, than along the seaboard, the reason is perfectly apparent. This would perhaps account for the difference of opinion in regard to the usefulness of this bird, between the western and eastern observers. Experiments to establish facts in connection with the controversy, have been conducted by the U. S. Department of Agriculture, and show conclusively that catbirds prefer mulberries to strawberries and cherries, and in those localities where the latter are abun-

dant, they amy easily be protected by planting the Russian Mulberry, which grows luxuriantly, in hen yards and runs, serving the double purpose of affording excellent food for the hens, and attracting the birds from the market fruit. Buckthorn, wild grape, dogwood, wild cherries, and elder, are also much sought for by the catbird and will be taken in preference to the cultivated fruit wherever it can be procured.

The catbird arrives from the South, early in May and consequently is obliged to subsist on other than ripe fruit for its vegetable diet. Until the time when the fruits ripen however, the greater part of its diet consists of insects, of which ants, May beetles, thousand legs, predaceous ground beetles, and caterpillars, form the bulk. Even at this time however, the bird will consume large quantities of last years smilax, sumach, etc. which have been exposed throughout the winter. During the greater part of June, the same, or nearly the same, conditions pertain, but as the weather becomes warmer and the vegetation increases the vegetable diet increases also. At the beginning of the season, the grasshoppers and crickets do not form a large article of consumption, but as June advances, they are consumed in great numbers. After the last week of June the number of these insects consumed is insignificant. The same is true of the May beetle consumption, which increases from the 1st to the 20th of June and then rapidly decreases.

The vegetable diet is greatly in excess after the first of July, and from the 1st to the the 25th, the ratio is 4 to 1. During this time the fruit is most abundant, and the catbirds enjoy the harvest to the limit. During this time only about two per cent. of the food consists of caterpillars and beetles. In their winter homes, these birds, while probably preferring fruits and insects, are forced to make many a meal from frozen berries and hibernating insects, which in the spring following would awaken, to lay countless numbers of eggs which would hatch into hungry and voracious larvae, capable of each day consuming more than their own weight of garden plants. The number of stomachs examined of this bird were one hundred and ninety-two, and were from specimens taken as far north as Maine and as far south as Florida, and covering a period extending from March to December. The examination has shown that of the animal food of the catbird, the beetles and ants form the principal part. Smooth caterpillars, crickets and grasshoppers are next in importance, while centipedes, thousand legs, bugs and spiders are not found in such large quantities, but nevertheless are constantly met with. The constant occurence of thousand legs in the stomach of the catbird, leads one to suppose that they are particularly relished, but owing to their abode, living as they do for the most part under stones and other articles upon the ground, they are not so easily captured.

In this and the preceeding paper, no mention has been made to the earthworms as an article of diet. As a matter of fact, earthworms form a far smaller proportion of the foods of birds than is generally supposed. Even the robin does not use as many as we are prone to believe from so frequently seeing him about ploughed ground etc. where worms are most likely to be abundant. It is a noteworthy feature, that out of the 192 stomachs examined not one contained an earthworm.

To sum up briefly then the economic status of the catbird, we may say that two-thirds of the food for the entire year is vegetable, and the remaining one-third animal. Of the former, the majority is composed of fruit, wild fruit preferred, but where the cultivated is more easily obtained or exists in

greater variety, the latter is taken to a large extent. Of the animal food, three per cent. consists of wild bees and carniverous wasps which assist nature by carrying pollen from one plant to another, but this is counterbalanced by the destruction of the thousand legs, plant feeding bugs and weevils.

The easily procured predaceous ground beetles, are also a favorite as has been mentioned, but even the destruction of these beneficial beetles is compensated for by the number of the May beetles and their relatives which are destroyed. These added to the caterpillars, crickets, grasshoppers, leaf eating lice and click beetles, make our friend *Galeoscoptes carolinensis*, clearly beneficial to the husbandman and as such he deserves their protection and care, rather than the persecution, to which however he is all too often subjected. The next paper will deal with the gastronomic proclivities of the House Wren.

Pancreatin vs Caustic Potash.

While I dislike entering into a controversy over this matter, I believe it is due the readers of this magazine that someone should compare the properties and merits of these compounds, as a knowledge of them may be the means of saving rare and valuable specimens which might otherwise be destroyed after having been taken from the birds.

When I wrote the item "Don't Use Caustic Potash" (Oölogist May 1899) it was with the purpose of adding something to the technique of preparing oölogical specimens. I have used both the pancreatin and potash during my eighteen years of oölogical collecting and after a careful comparison I am more in favor of using pancreatin for removing embryos than I ever was.

Let us compare the two compounds: Caustic potash [Potassa, Potassium Hydrate] is a very powerful and active alkali, which when brought in contact with other compounds, decomposes them, extracting their water and upsetting their chemical equilibrium When a drop of the potash solution touches the shell of a delicately tinted or spotted egg it decolorizes it wherever the solution touches. Having a decided propensity for combining with other alkalies the potash decomposes the calcium salts of which the egg shell is composed, changing them from carbonates, etc., to the hydrate and thereby rendering the shell very brittle and so disarranging and changing the composition of the egg shell, that *it is not egg shell at all but merely a compound made from egg shell.* Potash saponifies the embryonic contents of the egg and this soap is so alkaline that the whole inside of the egg shell is attacked by its corrosive and caustic properties and the shell is charred and weakened even if none of the solution touches the outside of the egg. The potash solution also attacks the skin on the hands of the operator and for that reason is disagreeable to handle.

In 1895 I took a set of eleven eggs of Blue-winged Teal which were advanced in incubation. Having no pancreatin I used caustic potash (which I had at hand) to help remove the embryos. The eggs are in my cabinet now but they are bleached on the outside and stained with dingy black on the inside, by the chemical decomposition brought about by the potash and are examples of what is claimed against the alkali.

Pancreatin is an organic ferment which digests albumenoids, converts starch into sugar, emulsifies fats and curdles milk. It is not sufficiently alkaline (or acid) to combine readily with the salts composing the egg shell, consequently does not change or decompose them. Being a ferment it di-

gests the embryo and renders it soluble in water so that it can be removed with ease. Trypsin, the main proteolytic principle of pancreatin is probably the most powerful ferment known. Students of physiology know how actively and powerfully the pancreatic juice digests all that is left after gastric digestion. (Pancreatin will digest 3000 times its weight of freshly coagulated egg albumen.)

A few weeks ago a friend in this city removed nearly fully matured embryos from a fine set of ten eggs of King Rail, in 48 hours He used one and one-half drachms of pancreatin (15 cents worth.) He injected the solution at 6 p. m., blew out and reinjected at 6 p. m. the next day and blew out all that remained of the embryos at 6 p. m. the next day without damaging the shell in color, texture or composition in the least. The shells of these eggs were very brittle as is usual when incubation is almost completed and in my opinion, he could not have had a perfect set of eggs had he used the potash to soften the embryos

In comparing the cost of pancreatin and caustic potash, I will admit that the digestant costs several times as much as the alkali but inasmuch as we buy these drugs only in small quantities the cost is not a matter of any great moment We use them only when we find something rare or desirable, and to prepare such specimens in a strictly first class manner we should and most of us do, look for satisfactory results regardless of expense, especially when the expense is only a matter of a few cents.

The question of time is also a matter of but little importance to one who wants to prepare his specimens in a first class manner. The actual time consumed in removing the contents by using pancreatin is probably less than while using potash. Of course time must be given for the ferment to digest the egg contents but that time is not necessarily wasted, as the ferment will do its work without watching or urging. The alkali solution has to be shaken about inside of the egg to obtain the best and speediest results and is slower when we reckon the actual time consumed in the preparation of the specimens.

Summing the matter up—the only point in favor of the caus ic potash is its cheapness. The points against it are: it will blacken and stain the egg; it changes the nature of the shell; it renders the shell more brittle and lessens the stability of the specimens, (this being admitted by Mr. Short, in April 1899 Oölogist, where he states in referring to the use of caustic potash: "*This is impracticable with thin shelled eggs as it makes them too brittle to stand anything.* You can often save large heavy shelled eggs when in the most advanced stages of incubation, etc." Another point against the potash is its attacking the skin of the operator's hands.

The points in favor of pancreatin as compared with potash are: It does not attack the shell; it does not bleach; it does not stain; *it is as useful for delicate thin shelled eggs as it is for "large heavy shelled" ones.* I have removed three-fourths incubated Chickadee's eggs in two hours, after injecting a 1:16 solution of pancreatin without injuring or staining the shells. Those who have tried to blow out incubated Chickadee's eggs know how difficult it is to do so without injuring their thin brittle shell. Pancreatin does not burn the hands of the operator wherever it touches. The only point against pancreatin is, that it costs more. It costs 10 cents per dram here in small quantities.

I trust these particulars will explain the advantages to be gained by using pancreatin in the removal of embryos and should anyone desire fuller information I will be glad to give same.

ISADOR S. TROSTLER,
Omaha, Neb.

July 24, 1901.

Some Surprises.

Eggs of our American Cuckoos have been found in the nests of other birds, but I never expected to have this fact verified by personal experience. Such was the case this spring, however. About eight feet from the ground in the main fork of a maple sapling amid the dense second growth bordering a big woods I found, on June 2d, a nest of the Wood Thrush, containing four eggs of the Thrush and one of the Black-billed Cuckoo.

Later, July 16, I met with another surprise in the heart of this big woods. It was a set of seven Redstart's eggs or rather two sets in one nest. One female was on the nest and the other close beside it. They were equally demonstrative of anxiety as I ascended the tree. The eggs were in two layers and all slightly incubated. Being of two distinct types there was no difficulty in separating them into sets of three and four. Now comes the question, are all the eggs found in a nest one set when you know they are laid by two birds? I do not consider them so. Instances of two Terns or Gallinules sharing the same nest are of almost yearly occurence here, but it rarely happens with the land birds.

Up to this year I found the Rough-winged Swallows breeding in single pairs only, but on the 30th of last May I discovered a small colony. Their burrows were in the perpendicular face of a gravel pit and about a quarter of a mile from water. The colony consisted of eight pair together, with two pair of Bank swallows and one of English Sparrows—all within a space of thirty feet.

Perhaps the greatest surprise of the season occured on May 9th at a Great Blue Herony, consisting of seventy-two nests and all occupied. I was high up in a large elm scooping eggs into a net attached to a long pole. Glancing into a neighboring tree I beheld a Red-tailed Hawk upon her nest. Climbed the tree later and secured her two eggs. She had taken possession of a Heron's nest and warmly lined it with corn husks, bark fiber, moss, dead leaves and a few feathers. It was situated amid the topmost branches of an ash tree and as our tape line was only 100 feet in length, I am uncertain of the height, but judge it at 112 feet. The remaining two nests in the tree contained Heron's eggs.

For some unknown reason the Red-shouldered Hawks laid larger sets this season. Our take consisted of three sets of three, thirteen of four and one of five. Most seasons three is the usual number per set. We secured second sets from most of the above, consisting of two eggs in every case.

The Cooper's that laid four eggs last year also went one better this.

J. Claire Wood,
Detroit, Mich.

How Some Birds Capture Their Prey.

(Continued from September Number)

Of all the birds which capture their food in mid air, the Swallows are the most entertaining. To be sure, the captured insect is so small that we cannot see it as a rule, but then we may watch the graceful skimmers as they sail about the premises, and we know that at each dash from the course the flyer has benefitted the agriculturist by engulfing an insect. Blue-backed Swallows prefer insects which are to be found about the water, and generally skim the surface in their search, while the Martin flies at a greater height and at certain times almost out of sight. All of the Swallows engulf their prey after the manner of the Nighthawk and Whip-poor-will, but do not capture such large insects as these night fliers.

The Cedar Waxwing ordinarily depends upon a diet of fruit and seeds, but at certain seasons feeds largely upon insects which it catches in the air with

much of the dash of a typical Flycatcher. I have seen a Waxwing perched on the topmost bough of a tree fly up and catch a score of insects inside of a very few minutes. In these movements it somewhat resembles the actions of the Redhead Woodpecker in that it nearly always flew almost straight up and then returned to almost the identical perch; but it is more graceful as a Flycatcher than the Woodpecker.

The Great Northern Shrike and our common White-rumped Shrike are the Hawks of the hedge-row and their dash and pertinacity are equal to the actions of the larger predacious birds. A Shrike rarely, if ever, captures a bird upon the wing; at least I have never witnessed the act and I consider them slow upon the wing. But they are great at strategy and frighten their intended victims so that they fall an easy prey. I have witnessed a capture where the Shrike had chased a Sparrow into an osage orange hedge and then tried to seize the trembling creature. Each time the Shrike made a dash the Sparrow would slip through the hedge to the other side and escape for a time; but it did not dare to leave its place of comparative safety, though I doubt not that it could have escaped by straight away flight. This game of hare and hound had continued quite a time, when the Shrike's mate appeared upon the scene and made a dive at the beleaguered Vesper Sparrow on the opposite side of the hedge. Two enemies were more than the distressed and rattled bird could manage and it quickly fell a victim to the rapacious pair which had a nestful of young near at hand.

The Vireos are graceful feeders and very deliberate in their movements. They have no dash in capturing an insect and depend more on the smaller larval prey, which is picked from the leaves and twigs with a coy movement, which is amusing. Often the movements of a feeding Vireo are quite similar to those of a parrot on its perch.

All of the Warblers are given to catching their prey upon the wing at times. though most of them are mainly gleaners among the twigs and leaves, while the Water Thrushes often wade about in the shallow pools for food and the Ovenbird occasionally scratchas after the manner of the Towhee. The Redstart dashes about among a flock of mosquitoes like a typical Flycatcher. I have seen the Pine Warbler dash out for an insect while it was singing in the top of a tall pine. The Hooded Warbler is another species which is expert at flycatching.

The Catbird occasionally captures an insect upon the wing as do also the Brown Thrasher and Robin, while the Swainson's, Hermit and Wilson's Thrushes are quite persistant in aerial forays, though all these birds are generally found feeding on the ground. The Robin's habit of dragging earth worms from their holes is well known and we have all watched the struggles of the captor and captive. Once I observed a Robin engaged in fishing. The spot was in the woods where a little brook swirled about the root-lined banks and made little eddies at the bends. In a shallow place the Robin was catching tiny minnows and appeared to follow the sport simply for the fun of it. There were a dozen little fish lying on the muddy edge and as I watched the fisherman twitched another minnow not over an inch and a half long from the water.

The House Wren sometimes catches an insect flying, but this species as well as all the others of the family mainly depends on hunting its food in the nooks and crevices, though the Long-billed Marsh Wren feeds from the water among the cattails and marsh debris.

The Brown Creeper is an interesting feeder and we marvel as we see the delicate creation creeping about the bark that this mite can sustain life from these

searches in the middle of winter. The Creeper generally begins its search at the base of the tree and circles upward and sometimes after reaching the higher branches will drop to the base of the trunk again. It differs, markedly, from the movements of the Nuthatch, which not rarely moves head downward in its search for insect food or seeds. I have seen the Red-bellied Nuthatch clinging to and feeding from a cone.

The Kinglets, Gnatcatchers and Titmice are pre-eminent as acrobats while searching for food, and the Black-capped Chickadee is foremost in these oddities of movement. Sometimes the Chickadee catches an insect on the wing. The Bluebird is another of our favorities, who frequently makes a flying capture, and I have seen a warbling male make a series of forays and catch an insect at every attempt.

MORRIS GIBBS, M. D.

Field Notes From Manitoba.

Continued.

THE WESTERN HORNED OWL.

Eighteen or twenty years ago I remember reading in Wilson's American Ornithology of the Virginian Horned Owl; but it was not till the year 1887 that I had the pleasure of making the personal acquaintance of *Bubo virginianus*.

The farmer with whom my first few months in this country were spent, came home one night from a few hours after the Prairie Chickens, and brought with him a fine Owl that he had shot on his way home in the dusk sitting on the top of a straw stack. I mounted it for him. It was a fine specimen of the Western Horned Owl.

Since then I have shot and handled a large number and taken both the young and eggs, having had fine opportunities to observe their habits. In this section they are fairly plentiful, frequenting the timbered country and are very partial to heavy timber following the course of creeks and rivers.

In such localities almost any evening in the year while walking or driving through the woods my attention has been arested by their call, "Hoo, Hoo, Hoo," thrice repeated, then a pause as though listening for an answer, and then repeated again till Mr. Bubo is tired or goes off to look for some dinner.

Until the spring of 1892 I had never found a nest of this species because I did not know just when or where to look for them. However, on the 1st of May, while looking for Red-tailed Hawks' nests, I chanced to see a pair of feathery tufts protruding from the top of a Red-tailed Hawk's nest. I rapped on the tree and off flew Mrs. Bubo. I climbed the tree expecting a set of Horned Owl eggs, and peeping over the edge of the nest saw three baby Owls in different stages of growth, but all apparently equally surprised and angry at my intrusion. One was feathering, one about half grown, while the third was a little downy fellow just emerged from his prison cell. I left them still manifesting their anger by a volume of hisses and bill snappings and descended to terra firma again. Two weeks after I called again to find the big fellow sitting on a branch away from the nest and the other two still in the nest. I took the two and brought them home, making them a cage of a large box and made pets of them till near the end of July, when I gave them their liberty again.

From these little captives I obtained some interesting notes, some of which I will record here. During their captivity they were quite friendly and except when fed always lived on the best of terms, but when fed they would sometimes show a disposition to quarrel over the possession of the food given to them. I fed them bodies of birds I had skinned, but they did not seem to like this kind of food, only eating it when forced

to by hunger. Mice and gophers seemed to be their favorite food and they had a great liking for snakes. When I would throw one of these into the cage they would immediately seize it, one at each end, and holding it down with their feet tear it to pieces and devour it. Rabbits seemed to be another favorite "dish," but they seemed to be lazy about this, as if I did not open the rabbit before I put it in it would remain untouched. Probably this was because the parent birds always tear to pieces the food they bring to their nestlings, and in captivity they failed to learn to provide for themselves.

During the day they would climb on to their block perches and remain very quiet, but toward dusk they became lively and noisy, spent a good deal of time trying to get out of their prison, eat any food I gave them and called to each other in a peculiar whistle, later using the same "Hoo, Hoo," that the adult Bubo uses in the weird hours of the night

It was very amusing to see them fight for the possession of a snake. One seizing hold of each end they would tug and pull, flutter and struggle till the snake would come in two, and they would each take its portion to a different corner of the cage and devour it.

Well to leave the young Owls and return to the woods in the spring of '93. On the 15th of April I found another nest of *Bubo virginianus*, this time in an old Broad-winged Hawk's nest in an oak tree about 30 feet from the river bank and 35 feet high. Mrs. Bubo was at home and a good rap on the trunk brought her off. In this nest I found one just hatched, young one and two badly incubated eggs, all of which I left. I might here mention that the first nest recorded was in a tall oak on an overhanging branch 40 feet up on the bank of a dry ravine and about 150 yards from the river Boyne. The nest was an old Red-tailed Hawks used the previous season and about the 21st of May, shortly after taking the young birds, I took from this nest a set of three finely marked Red-tailed Hawk's eggs.

My third find of this species was in the latter part of April, 94. While following the Boyne river in search of Ducks I came upon it in the main fork of a giant basswood tree 45 feet up. An old and very delapidated Red-tail nest did duty for a home. No repairs had been bestowed upon it, but the large fork in which it was situated helped to make it more habitable. I could see that the nest contained young so I climbed up to investigate, leaving my coat at the foot of the tree with my gun. Just as I peered over the edge of the nest endeavoring to raise myself above it, the old bird resenting my intrusion made a dash at me, striking me in the back with her talons, which I felt through vest and two shirts. The male bird joined in the attack, but was not so bold, contenting himself with dashing past or sitting on the branch of a neighboring tree and mingling his vociferations with those of his three offspring in their hissing and bill snappings.

In the nest I found the hind quarters of two rabbits, half a garter snake, about medium size, part of a weasel, the legs and one wing of a Sora Rail and an almost entire male Ruffed Grouse.

The nest first mentioned having contained a one-third eaten Prairie Hen, part of a garter snake, an almost entire gopher and the hind quarters of a rabbit. This shows how royaly these powerful birds of prey supply for their young.

C. P. Forge,
Carman, Manitoba.

[To be continued]

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FOR SALE.—A1 sets with data of American Osprey 1-2, 75c; Black Vulture 1-2, 49c; Arctic Tern 6 3, 19c; Roseate Tern 4-3, 22c, 2-2, 14c; Am. Crow 1-4, 10c; Wood Pewee 3-3, 19c; Am. Redstart 1-3, 18c; House Wren 1-5, 15c; Towhee 1-3, 10c; Mockingbird 1-4, 10c; Black-crowned Night Heron 1-4, 34c; Snapping Turtle 2-21, 90c. Prices are per set prepaid. One old muzzle loading rifle, $2.00. JAS. O. JOHNSON, Southington, Conn.

WANTED:—Eggs in sets. Have to offer Vol. III, IV and V Osprey and many other odd copies of different magazines; also A No. 1 sets of eggs 1-3 677, 1-7 390, 1-3 1-4 80, 1-4 201, 1-7 475, 1-2 420 and others. Send for lists. RAY DENSMORE, Painesville, Lake Co., Ohio.

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Books for the Naturalist.

In September OÖLOGIST we offered four pages of Books and Pamphlets on **Ornithology.** In the October issue we offered four pages on **Zoology, Mammalogy, Herpetology** and **Ichythology.** This month we offer four more on **Marine Invertebrates, Conchology, Entomology, Botany, Geology** and **Mineralogy.**

In our "CLEARANCE SALE LIST" of Nov. 15th. We offered *all* offered in the three OÖLOGISTS mentioned and in addition three pages on **Palaeontology, Ethnology** and **Archaeology, Microscopy** and **Miscellaneous.**

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FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

The Spotted Owl.

(*Syrnium occidentale.*)

BY HARRY H. DUNN, FULLERTON, CAL.

Of this owl, probably the rarest North American species of its genus, very little appears to be known. At least, when, a year or two ago, I attempted to gather together a little information on the genus Syrnium, I met with very meager results concerning this particular bird. Of its occurrence in Southern California I was then quite well assured as I had seen feathers, which I supposed belonged to this species, on the ground under trees which were evidently the nightly "hunting boxes" of some owl. But it was not until this season that I became thoroughly acquainted with this large, dark-colored bird in its summer home and as I have taken three sets of two, three and four eggs respectively, I feel warranted in inflicting myself upon such readers as I may have with a short description of bird and nesting habits.

The country round about my home, here on the north western border of Orange county, is extremely hilly and given over to small and precipitous cliffs. The hills are not what would in the east or middle west be called "well wooded," but in some of the more protected canyons a heavy growth of oak and sycamore with now and then a cottonwood may be found. On March 26th of the present year, I was making my way up one of the larger of these canyons keeping a sharp lookout for Western Red-tails and Pacific Horned Owls, which the latter frequently occupy old hawk's nests, when my attention was drawn to an old oak stump some fifty yards up one of the sides of the canyon, by the actions of a pair of Desert Sparrow Hawks. I was morally certain that the little Hawks were not nesting at so early a date, but I had just taken two sets of Western Red-tails, each consisting of four eggs, so I was ready for any old chance that happened to come along. I clambered up

to the stump and dealt it a resounding blow with the small hatchet which I usually carry with me on such occasions. Much to my surprise a large owl came hustling out of a hole some ten feet from the ground, and flying across the canyon, settled on a dead sycamore limb, thus permitting a good view of her brown body, heavily marked with blotches and bars of a darker shade. Up to the tree I went, and peering into the hole saw some three feet down three pure white eggs on a bed of rotten wood. I returned to the bottom of the canyon and got my rifle (a 22 calibre collecting gun) and my box. When I came back the owl was still sitting where I had left her, and when I came in sight she commenced snapping her beak at me, much as does the Long-eared Owl. I noticed that her face and in fact most of her head was much lighter in color than the rest of her body, and though quite sure of the species, I shot her, and upon careful comparison with description and measurements given by various authors, I proved her to be the Spotted Owl. This bird was very near as large as the average of two female skins of the Pacific Horned Owl now in my possession, she being 20.50 inches long and having a wing length of 13.75 inches.

The eggs are much like those of the Horned Owl, only rather more glossy and a trifle smaller. In fact they are perfectly similar in all ways to those of the Barred Owl of the eastern states. These three were fresh, but dissection showed her to have laid her full complement.

At a distance this bird when in repose would pass for a Horned Owl, though in the three cases which have come to my notice, the male Spotted Owl did not appear at the nest as the male Pacific Horned usually does, nor did the female Spotted Owl make any noise whatever, save the snapping of beak, during my stay at the nest, a trait common to the female of the Pacific Horned. I have taken sets of this latter bird from nests with the male and female sitting on a boulder not twenty feet away and "hooting" with all their lungs.

My second set, consisting of two eggs, I found in an old hollow sycamore stub, which had fallen slanting across the creek bed, and was led to its discovery, as I have been to several nests of the Pacific Horned Owl, by a tell tale feather which still clung to the rough bark of the tree. This was on the 16th day of April and was in the Santa Ana canyon about eleven miles from my home. I did not shoot this bird as she was on the nest and well seen. Incubation fresh, but as one egg had slight traces of blood, I consider it a full set. On the 18th of April, just two days later, I took my third set from a hole in a live oak about 20 feet from the ground, the eggs being laid about a foot and a half in from the entrance. The bird was on as before but also left with a few snappings of her beak when I rapped on the trunk. This was a natural cavity and had, I think been occupied by Desert Sparrow Hawks the season before. There were four eggs in this set and all were more or less incubated indicating that the bird had made a business of sitting on the eggs from the time the first was laid. No attempt at nest building was made, though the hole was very near horizontal with nothing to prevent the eggs rolling out should they once get started. The eggs were similar to the two previous sets and not so granulated or "lumpy" as type eggs of the Pacific Horned Owl usually are.

On the whole, I think from my experience this season that the Spotted Owl is about one-third as numerous during the breeding season in southern California as is the Pacific Horned Owl, of which I took nine sets this year against the three sets of the Spotted

just mentioned. Neither owl is nearly so rare as the Short-eared owl which I have found breeding but once and then with a nest full of young.

Field Notes From Manitoba.

Continued.

THE WESTERN HORNED OWL.

I did not visit this nest again, but in the spring of '95 I decided to profit by the three accidental finds I had made, and on April 1st, I took the course of the river west and as the ice had not broken up and made the best walking, I followed the river on the ice about three and one-half miles west of town. I found in a basswood tree leaning over the river an old Broad-winged Hawk's nest, from the top of which peeped two tufts of feathers, which previous experience told me were the ear tufts of Mrs. Bubo. Knowing that all was right, I climbed the tree and as I neared the nest the old bird flew off and perched on a tree near by, while I finished my climb and examined her home.

The nest was small, very little more than a foot in diameter and only just hollowed enough to keep the eggs from rolling out. It was lined with a few of Mrs. Bubo's feathers and contained but two eggs. These were in different stages of incubation. I left them in the nest to see if she would lay any more and returning a week after found the two eggs still there and Mrs. Bubo still engaged in the duties of incubation. So being sure the set was complete I took them.

From '95 to '98 I left my Horned Owls to breed in peace, when on the 24th of March I thought by way of recreation and for necessary out-door exercise I would see how they were prospering. Accordingly, taking my gun and a box well filled with cotton in my pocket, I took the course of the river east from town and after passing various unoccupied nests found in an elm close to the bank of the river 25 feet up an old nest of the Broad-winged Hawk, from which I could see the tell-tale tufts protruding. Climbing the tree I found the nest again a very small one and contained only two eggs, which I left to see if any more would be laid. Returning a week after I found the nest as I had left it and the two eggs awaiting me, so I took them.

On the 1st of April I followed the course of the river west and in a basswood tree leaning over the river I found another nest. Mrs. Bubo was at home, as numerous feathers caught on the edge of the nest and in the nearby branches testified, and after a short climb I reached the nest, which contained the usual complement of two eggs I left this nest for eight days, when I returned to find that Mrs. Bubo considered a family of two enough to look after and I by taking her complement of eggs put her to the trouble of resuming her household duties. This nest was about 25 feet up and quite near the place I found the nest in '95.

In '99 I tried the same route on the 29th of March without success to the east and on the 3d of April to the west for three miles, but found no nests. I however saw two Owls, one of which I shot, a fine male of *Bubo virginianus subarcticus*, which is the commonest representative of the family here.

In 1900 I again tried my luck and on April 2d in a grove of oak trees three miles east of town on the bank of a ravine I found a nest of the Red-tailed Hawk, occupied by Horned Owls. This nest was occupied last year by Red-tails and as Owls generally are not well versed in the mysteries of architecture the nest was simply flattened and two eggs rested therein. As it was late in the season and the eggs appeared pretty well advanced in incubation, I took them and after spending the balance of the afternoon in fruitless search returned home. The nest was in a tall oak 40 feet up and on a main fork plenty of

feathers in the branches and on the side of the nest, showing that the birds had often passed to and fro. All these sets and nests were those of the Western Horned Owl.

This year on March 17th I thought I would enjoy a ramble in the woods. It was a lovely day and mild, and as the snow was too deep in the woods for comfortable walking I took the course of the river and walked on the ice, which was smooth and without snow from a previous t aw. About two and one-half miles east of the town I visited a Red-tail's nest in a large oak tree, from which I had secured a set of eggs last spring, and as I clambered up the river bank I noticed Owl feathers in the branches and on the edges of the nest. As I drew closer I could see the tell-tale tufts and knew I had located Mrs. Bubo's intended nursery. As it was Sunday I did not climb, but made up my mind that I would visit this nest again, so on the 23d as the river was still frozen I hitched my horse to the cutter and drove down to see how Mrs. Bubo was prospering. Arrived at the wooded point, almo t an island, well timbered with oak, elm and basswood, I left the river and following my path of last Sunday soon reached the foot of the tree. Mrs. Bubo was at home and I began the ascent. The tree was so large I could not shin it, so I climbed a small sapling and swung over till I could climb into the first fork. After this, as there were plenty of branches, I soon reached the nest. The old bird flew off as I neared it and alighting on a dead tree close by watched me.

As I peered over the edge of the nest four handsome eggs arrested my gaze, and raising myself above the nest I took notes. The nest was large, 20 inches in diameter and was in better repair than usual. The cavity also was deeper, 9 inches in diameter, just holding the four eggs nicely. Quite a lot of downy feathers were caught in the branches near the nest and on the edge of the nest and a few of these also composed a lining.

While taking my notes the male bird came flying by and made a dash at me, and both male and female began scolding me for my intrusion, uninvited into their home, snapping their bills and hissing at me and calling to each other "Hoo, Hoo." I had a fine view of them as they sat in the tree-top close by, every few minutes making a dash at me as though to drive me from their home. The smaller size and very light color and pure white feet told me that I had, without doubt, found a nest of the Arctic Horned Owl (*Bubo virginianus arcticus*). After taking all notes and getting the height of the branch on which the nest rested, an overhanging one and 35 feet from the ground, I descended, returned to my cutter and followed the course of the river to where the bush ended, finding no more nests.

On March 29th I tried the river west and as the ice was getting pretty rotten the cutter broke through and I nearly got a cold bath. However, I saved myself by reaching out my arm and righted the cutter with only an arm wet to the elbow. On this occasion I found in a basswood tree in a Red-tail's nest, old and dilapidated, a set of two Western Horned Owl's eggs. Both were incubated and as is usual the one about a week more than the other. This nest was 25 feet up and in a tree quite close to the river bank. The nest was very flat and well adorned with the yellowish downy feathers of its occupant. I took the eggs and as the unsafe state of the ice prevented further progress returned home.

Now to sum up. These birds seen in this northern latitude are very early breeders, nesting always while the snow is on the ground, dates being from the 17th of March until 1st of April. I have never known them to construct their own nest. They always seize on the

nest of some kind of Hawk and use it for their nursery. They like to build near a ravine or river, for the reason that finding a tree whose branches overhang the river the male takes up his position there and watches until some unwary mouse, squirrel or rabbit crosses the ice, when he swoops down upon it and carries it off to his mate. They hunt chiefly at night or in the dusk of twilight, which accounts for the presence in their nests, which contain young, of such dusk-loving animals as rabbits, (northern hares) pocket gophers, mice and snakes. They take birds as they roost and the birds most frequently caught by them are ground birds as the Grouse, Rails, etc. These they catch while sleeping, as you may prove for yourself if you will go out some fine night in the spring at the time the Owls have their families to provide for, and sitting down in the shelter of the trees on the border of the woods frequented by them watch them. As twilight deepens you will hear a call "Hoo, Hoo, Hoo," then a pause and again thrice repeated the "Hoo, Hoo, Hoo." Strain your eyes and against the evening sky you see Mr. Bubo sitting motionless as a statute on some dead stump or limb of a tree or perhaps a fence post. Watch him. In a moment he leaves his perch and flaps noiselessly over the grass, keeping about three or four feet above the ground. His large wings and soft plumage carry him silently through the air and his large, well developed eyes scan the ground for his prey. Ah! see him poise. He sees some game. Hovers a moment, then drops. Run to the place and you see him rise from his quarry. He carries off with him a mouse, a rabbit or perchance a Grouse. On fine evenings in the spring I have witnessed this performance as I sat down to rest on my way home after a day's collecting

I don't want to impress the reader that they are a very destructive bird, for I find that it is only at the season when they are raising their brood that they destroy much game. At other times it does not take much to keep a pair of these Owls, for the two I had in captivity were not very large eaters, a full-grown rabbit lasting them for three days.

If you will open these Owls' stomachs at other seasons you will generally find that its stomach contains 95 per cent. of the remains of mice, moles, weasels, snakes, rabbits and such mammals and that few birds are taken.

We have the three varieties of the Great Horned Owl here, the two previously mentioned and the Dusky. This variety is rarer than the other two, only about three specimens having come into my hands. I have not found their nests as yet, although I feel pretty sure that they breed here. I had one brought to me in July of '94, and it appeared to be a young bird, as all the down was not off its feathers.

The Arctic is rather more common, but chiefly seen in winter. With the exception of the nest found this March I have never seen a nest. This year while on a visit to Rock and Pelican lakes I boated down the Pembina river for about seven miles between half past 4 and half past 10 on the third of July, and after passing a heronry of the Great Blue Heron in a very secluded spot at a bend of the river where the crooked course of the river almost forms a large island, I frightened from their perches on overhanging branches four young of the Arctic Horned that were well able to fly. They alighted in different places near the river, some on overhanging branches and one, the smallest of the four, on a stump. I passed within ten feet of him as he sat there staring at me with his big yellow eyes, and knew at once that I had seen a family of *B. v. arcticus.* These were all one brood, I have no doubt, as they stayed close together and had probably been hatched

in one of the old Heron's nests in the heronry before mentioned.

Well, so much for *Bubo virginianus* in his different phrases. When I again take up my pen to treat the readers of the OOLOGIST to some bird lore I will tell them something about the Loon.

C. P. FORGE,
Carman, Manitoba.

The Food Supply of the House Wren.

BY C. C PURDUM, M. D.

One of the birds I most love is our quick motioned and cheerful little House Wren (*Troglodytes aedon.*) I meet him everywhere in the United States where I may pitch my tent, except in the mountains. In the winter, if I chance to be in the woods in Georgia, Alabama, Mississippi, or in fact any of the Southern states, he is there to greet me. If in the summer, when the heat becomes oppressive, I invade the cool and delicious solitudes of the forests of Maine, I find him always cheerful, always chirping happily to his mate on her eggs in the nest in the fence post, and always glad and happy to be in the society of man. Like our friend *G. carolinensis*, the House Wren rears two broods each season, depositing six to eight reddish brown eggs, generally in some artificially constructed shelter. Thus we find them nesting in bird boxes, unused gutters, tin cans of all sizes, which by chance are elevated somewhat above the ground, holes in the fence posts, old wood-pecker holes, and in one instance in a watering pot which was suspended from the back porch.* Some years ago when the writer was preparing a report on "Odd and peculiar Nests and Nesting" (the completion of which was interrupted by a long period of sickness,) he received an interesting note from an observer in the West † as follows: "The day before yesterday I took a set of seven eggs of the House Wren. I have taken many sets of these eggs before, but the peculiar situation of the nest, etc., warranted I think, taking it. An old rubber boot had been cut down to the ankle and the foot used as a shoe by one of the farmers about here, and had afterwards been discarded in the field. In clearing up the field the next Spring preparatory to planting, the improvised shoe had been thrown carelessly into a brush heap at the edge of the field, and remained there. The birds took possession of this and filled it with sticks and then built a nest, thus making for themselves a very substantial abode. The nest and it's encasing of boot foot, make a very interesting addition to my collection" In most localities, this bit of perpetual motion is respected by the farmer, and his worth fully appreciated. Hunting with the minutest care, but with marvelous agility, the Wrens skip hither and thither along the fences, about the brush heaps, in and out among the stones of the loosely constructed walls of the pastures, through the orchards, and about the out buildings, searching with their little piercing eyes, every crevice, nook, and cranny, for food for their youngsters and themselves, and altogether make one of the most useful, and certainly the least expensive of the farmer's assistants. The report of the U. S. Dep't. of Agriculture, on this bird, gives the results of the examination of fifty two stomachs, taken from a range extending from Connecticut to California.

Ninety-eight of the stomach contents was composed of insects, while the remaining two per cent. was composed of rubbish, like bits of grass, wood, and sand, which was in all probability taken by accident. No vegetable food could be said to have been taken intentionally, was found in any one of these

*Report on the House Wren, U. S. Dep't. of Agriculture, 1895.

†Mr. Roy G. Fitch, since deceased.

stomachs, and none was expected, for I do not know of one observer who has taken the trouble to closely follow the habits of these birds, who has been guilty of charging them with even an occasional departure from an insect diet.

Nearly one-half of the insects consumed are grass-hoppers and beetles, and the other half is about equally divided among the bugs, spiders and caterpillars. Among the beetles, the ground varieties form about six per cent, and the weevils rank next in importance. Indeed during July they approach eleven per cent. Only about half as many dung beetles are consumed, as weevils are not eaten at all after May, when these beetles are of most value from an economic standpoint. Among the other varieties, which were found in only small quantities or occasionally, may be mentioned, beetles of the firefly group, leaf beetles, click and rove beetles.

"One bird had eaten a longicorn beetle." From the examination above spoken of it was found that during the month of August, the grass-hoppers reached a maxium of sixty per cent., to the exclusion of some of the heretofore most common kinds of insects. Of this sixty per cent. the common and green grass-hoppers and insects formed the bulk, and as the bird continues to eat insects after the fruit ripens we can not but make a most favorable comparison between it and the bird of our last paper, *Galeoscoptes carolinensis*. Among the bugs consumed by the House Wren are many of the plant feeding and leaf hopping varieties.

The stink bug (*Pentatomidae*) is also consumed in large numbers. Plant lice are occasionaly eaten. The large number of daddy-long-legs which this bird devours, is however, from a strictly economic standpoint, somewhat detrimental, as they are known to feed upon aphids. Very few flies were found in the stomachs, owing no doubt to the fact that these insects are more difficult to capture than the others. But few wasps were found.

In conclusion I can do no better than to quote "verbatim," from the excellent paper of Mr. Sylvester D. Judd, Assistant Ornithologist to the Department of Agriculture.

"From the foregoing detailed account of the Wren's food, it is obvious that the bird is very beneficial to agriculture. Such insectivorous birds should be encouraged. It is a pity that the quarrelsome English sparrow can not be exterminated, for if in the place of every dozen English Sparrows, there was one House Wren, our churches would present a more sightly appearance, while the yield of the crops of the country would be greatly increased. At Cambridge, Mass., the sparrow has driven the Wren away by occupying the nesting boxes. This is true to a certain extent wherever the two birds have met. To secure the services of the wren, the farmer must put up nesting boxes and declare war on the sparrow."

TABLE SHOWING NUMBER OF STOMACHS AND PER CENT. OF FOOD.

Number of stomachs examined	52
Per cent. of animal food.	
Ants	4
Caterpillars	16
Beetles	22
Grasshoppers	25
Bugs	12
Spiders, Thousand-legs, etc	14
Miscellaneous	5
Total animal food	98
Miscellaneous vegetable food	2
Total	100

Nesting of the Coppery-tailed Trogon.

One of my collectors has recently sent me several sets of eggs of the Coppery-tailed Trogon, and as they are quite rare I thought your readers might be interested in his letter describing the tak-

ing of a set of them. They were taken on July 24 of this year. He writes:

"We left Sinaloa, Mexico, at 5 a. m. on the 23d of July. The pack mules were started, but it had taken so long to get them off that we decided to take lunch before leaving. After lunch we went down to the river and were ferried across, while the mules were required to swim. Our afternoon ride was a pleasant one and we enjoyed it hugely. It was through a rather low growth of all sorts of strange trees. There were giant cacti of various kinds, several varieties of prickly pear and many climbing vines. At frequent intervals we came to native dwellings, as poor as they could be to be called shelters, the sides made of brush and the top thatched with palm leaves.

"I never elsewhere saw so many tarantulas. Their holes lined the sides of the road, and occasionally one would stick his front feet out as we went by. Before night came on our mules showed signs of fatigue, though we had traveled slowly. Toward evening we struck the first creek of any importance, by the side of which the natives were starting to cultivate corn. The temperature was about the same as that in a moist hot house. It was just as the sun was setting that we rode into a little village of thatched houses. We put our cots under a shed and tried to get some sleep, but it was rather a failure, for the burros kept up a braying to each other through the entire night. I put in only about an hour's sleep for the night.

"Our mozos was up at 4 a.m. and fed the mules, and by 6:30 we were off on the road. It was like a moist hot house all morning. The trail was a pretty one, winding beside an arroyo with large trees and very dense foliage all around. Here and there we would pass patches of bananas, mangoes and sugar cane, with a little thatched cottage in the grove generally shaded by an orange tree. As we were riding along a stony bit of trail, always on the lookout for curios, my eyes caught sight of a bird which interested me. There are lots of large green and blue parrots to be seen along the trail, and another bird of brilliant red, green, black and white plumage. I saw one of the latter disappear behind a stump, and on riding up to it she flew out of a hole in the stump. I looked in the cavity and found her nest of eggs. I did not see how she got in there, for her tail was as long as the hole was deep. I think she must have left it at the entrance and put it on again when she went out. My old spirit of collecting birds' eggs got the better of me, and out the eggs had to come. They were fresh, and I blew them and put them back in the nest, covered them with leaves, sticks and stones and left them until my return trip some weeks later."

The native name of this bird is Coa or Cola, but the A. O. U. knows it as the Coppery-tailed Trogon.

The eggs are pure white, about as dull in color as a pigeon egg, and either two or four in number.

R. P. SHARPLES,
West Chester, Pa.

Mr. Richard C. McGregor of the U. S. S. "Pathfinder" under date of August 16th, in Dutch Harbor, Alaska, writes: "I have some little time for birds, etc., here. Have put up plenty of skins of Aleutian Leucosticte, Sandwich Sparrow and Aleutian Song Sparrow besides a few other species. Have eggs of Nelson's Ptarmigan, Fork-tailed Petrel, Sandwich Sparrow, Green-winged Teal and some common things.

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A MONTHLY PUBLICATION DEVOTED TO

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VOL. XVIII. NO. 12. ALBION, N. Y., DECEMBER, 1901. WHOLE NO. 183

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190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

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THE OÖLOGIST.

VOL. XVIII. NO. 12. ALBION, N. Y., DECEMBER, 1901. WHOLE NO. 183

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher, ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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Warblers Found Breeding in Livermore Maine.

BLACK AND WHITE WARBLER (*Mniotilta varia.*) Breeds, but its nests are very hard to find. I think it is not an uncommon breeder in this locality, and is found quite abundant during migration. Earliest nest found May 25th, latest June 9th. Eggs 3 to 5 in number, color white, spotted in the form of a wreath around the large end with hazel, lilac, chestnut etc. Nest composed of leaves, bark, pine needles, grasses, lined with horse hair, and hair like roots.

NASHVILLE WARBLER (*Helminthophila ruficapilla.*) Fairly common breeder in this locality. Its nest is well concealed and very hard to find unless the bird is flushed from it. Earliest nest found May 31st, latest July 5th. Eggs 3 to 5 in number. Color white, spotted over the entire surface with lilac, chestnut etc. Nest composed of grasses, moss, pine needles and hair, and sunk deep in the ground so that the top of the nest is level with the surface.

NORTHERN PARULA WARBLER (*Compsothlypis americana usnea*) Breeds, and no doubt quite abundantly in this locality where trees are found that are laden with the long gray moss the usnea of the botanist, that is found in such abundance throughout the forests of Maine, but I have never found its nest until this season. They were built in woods near stagnant pools of water at a height of from 20 to 30 feet from the ground. Earliest nest found July 9th, latest July 22d. Eggs 3 to 5 in number. Color white, speckled with brown, chestnut, grayish etc. Nest composed of the usnea moss. The usnea moss in which one nest of this species is built and which is in my collection, measured 33 inches in length. It was in a dead spruce, and is a beautiful nest.

YELLOW WARBLER(*Dendroica æstiva.*) Fairly common here, but not so abundant a breeder in this town as in other localities near by. Breeds very abundantly at Dead River and Androscoggin Lake in the towns of Leeds and Wayne, Me. See THE OOLOGIST, Feb., 1900, pages 26, 27 and 28.

Master Harold W. Philoon found a beautiful nest of this species containing four eggs, built in a pear tree at his home in Livermore this past season.

Nests early in June in this locality. Eggs three to five in number; color, greenish or bluish white, spotted with black lilac and brownish, thickest at the large end in the form of a wreath.

The nest is very finely made and is composed of plant stems, fine fibers and grasses, and lined with soft plant down and some times a few feathers. I have never found them built over ten feet from the ground, seldom more than two or three, although I have found a large number of them.

BLACK-THROATED BLUE WARBLER (*Dendroica cœrulescens.*) I consider this species a very rare breeder in this locality and have only one record of its nesting in this town June 12, 1893. A nest containing four slightly incubated eggs, placed in a low bush about eighteen inches from the ground, and composed of nearly the same material as described for this species in Davies' Nests and Eggs of N. A. Birds, 4th edition.

The color of the eggs is a greenish white, very heavily blotched with redish brown chestnut and hazel nearly covering the entire surface at the large end; a very beautiful set of eggs.

MYRTLE WARBLER (*Dendroica coronata.*) This Warbler although not an abundant breeder in this locality is not rare here by any means, and I think is far more plentiful than one would suppose. I consider this species a common summer resident and is found breeding in coniferous growths of small pines at a height of from five to fifteen feet from the ground. Earliest nest found May 23d, latest June 15th.

Eggs four or five in number; color, white, spotted with reddish brown and blotched with large patches of lilac, mostly around the large end in the form of a wreath.

The nest is composed of fine twigs of the hemlock and fir and fibers, and a few dead grasses, and lined first with soft grasses and lastly with a warm bed of feathers from the Canadian Ruffed Grouse (*Bonasa umbellus togata.*)

MAGNOLIA WARBLER (*Dendroica maculosa*) Very common breeder in this locality. Have found many nests of this species built in confirious growths of pine, hemlock, fir and spruce at a height of from two to ten feet from the ground.

Earliest nest found June 5th, latest July 5th.

Eggs three to five in number; color, white, spotted, speckled and blotched with brown hazel black and chestnut in some nearly all at the large end, in others over the entire surface.

Nest composed of fine twigs and grasses and lined with fine black hair like roots; it is made very flat and is very loosely constructed.

CHESTNUT-SIDED WARBLER(*Dendroica pennsylvanica.*) Abundant throughout its range and a very common breeder in this locality.

Its nest is commonly found built in low bushes seldom more than two feet from the ground in old bushy pastures.

Earliest nest found June 3d, latest June 27th.

Eggs three or four in number; color, white, spotted with brown, chestnut, lilac and sometimes dots of blackish.

Nest composed of bark, dead grasses, weed stalks, plant down, etc.; lined with fine grasses and horse hair, and is generally loosely constructed, although this is not always the case, for I have found them finely made.

BLACKBURNIAN WARBLER (*Dendroica*

blackburniæ.) I consider this a very rare breeder in this locality, but is fairly common during migration. I have never found its nest, but have taken their young just out of the nest, and have observed them feeding their young in the tree tops in a woods of pine, cedar and fir.

This past season the date at which I took the young was July 29th. No doubt fresh eggs could be obtained in the latter part of June in this locality. Next season I hope to record a nest and eggs of this species from Livermore.

BLACK THROATED GREEN WARBLER (*Dendroica virens.*) Common summer resident and no doubt a common breeder in this locality, although I have found but few nests.

Earliest nest found June 8th, latest June 26th.

Eggs three or four in number; color, white, with a wreath around the large end of rufous lilac, chestnut and brownish spots, although some are spotted over their entire surface.

Nest is composed of bark strips, dead grasses, hair and sometimes feathers; lined with fine down and hair, and all that I have seen were built from five to fifteen feet from the ground.

PINE WARBLER (*Dendroica vigorsii.*) I think this species is a common summer resident in Livermore, although very few nests are found and I do not think it is found breeding very abundant in any part of the state.

I have had the good luck to find two nests, each containg four eggs, one June 14th, the other July 6th, both built in small pine in thick coniferous woods, one about fifteen feet up and the other only six or seven feet from the ground.

Eggs white or grayish white, spotted and blotched with brownish lilac and blackish in the form of a wreath around the large end, the rest of the egg sparingly marked.

The nests are composed of fine strips of bark from the birch and grapevine, find dead grasses and a few fine twigs, and are deeply hollowed and lined with fine dead grasses, hair and hair like roots, and warm mosses, and are very thick and warmly made.

OVEN-BIRD (*Seiurus aurocapillus.*) A common breeder in this locality. I have found many nests of this species and I do not consider them hard to find.

The most beautiful nest and eggs of this bird that I have ever seen was one that I found in the month of June, 1898, in the town of Leeds, Me., near the Androscoggin Lake, that I have mentioned in THE OOLOGIST, Feb. issue, 1900, page 26.

Well do I remember that night, for it was after the day had past and the sun had gone down below the western hills, and night was coming on. With my naturalist friend, Mr. J. E. Teague, of Livermore, who has been my companion on many a camping expedition, I was climbing a hill to view a cavern far up the hillside among the ledges. Everything was silent, not a breath stirred the leaves of the giants of the forest, and from the hilltop we could look out over the silent waters of beautiful Androscoggin Lake, dotted with its many islands, its waters glistening like silver under the rays of the rising moon. That one could always go through life as calm and peaceful as this. A scene like this brings one nearer to his Creator and fills him with more noble purposes. It seemed as though I was looking into another world as we stood looking out on to this grand sight.

The silence was broken from a clump of bushes near by. There came to us the mournful notes of the Whip-poor-will, then from the deep dark forest the hoot of an Owl was heard, then silence; then from far out on the lake came the mournful screams of a pair of Loons that were nesting there, then silence again. Night had come and all nature was at rest.

We turned to retrace our steps back to camp, when, from the leaves at my feet, there ran a little bird with the actions of a mouse, and looking down, we beheld the beautiful home of the Golden-crowned Thrush, built among the grand old hills of northern Maine.

This species nests in this locality in June. I have never found it nesting in any other month of the year.

The eggs are four or five in number, usually five, and are too well known to need any description, as is also the nest.

MARYLAND YELLOW-THROAT (*Geothlypis trichas*) Common breeder in this locality. Have found many nests built in bunches of grass or low bushes, and sometimes on the ground at the foot of a tussock of grass near or in swampy localities.

The nest is very hard to find by watching the birds carrying nesting material, and nearly all that I have found was by flushing the bird from the nest, which is very large and bulky for so small a bird.

Earliest nest found June 6th, latest June 28th.

Eggs three to five in number; color, white, spotted and lined with brown and black mostly at the large end, although the rest of the egg is not unspotted.

The nest is composed of dead leaves and course grasses and lined with fine dead grasses and horse hair.

CANADIAN WARBLER (*Wilsonia pusilla.*) Rare breeder in this locality. Have never found its nest. July 10th found two pairs of these Warblers feeding their young. It was in a low swampy woods of fir, spruce and ash. The young were hardly able to fly and were easily caught and positively identified. Next season I intend to find a nest of this Warbler if careful search will reveal it.

AMERICAN REDSTART (*Setophoga ruticilla.*) Abundant breeder and a beautiful bird and with tail spread like a fan they flit from tree top to tree top, reminding one of a huge butterfly in all the brilliant colors of the rainbow. The Redstart delights to nest in woods of deep green foliage near running streams.

Earliest nest found June 1st, latest June 25th.

Eggs three or four in number; color, white or greenish white, spotted with brown and lilac over the entire surface, thickest at the large end.

Nest composed of fine fibers and bark strips and spider webs; lined with grasses and horse hair. Built from five to fifteen feet above the ground.

In closing this paper I would say that I consider the Warblers the most interesting famiiy of birds for the ornithologist to study, and in giving the description of the nests and eggs in this paper, I have described specimens that are in my own collection, and while it may differ from the descriptions given by others, it is correct in regard to the specimen that I have examined.

Hoping that more attention will be given to the study and less to the destruction of our feathered friends, I remain oologicaly and ornithologicaly,

GUY H. BRIGGS,
Livermore, Maine.

The Accipiter Cooperini in Wayne and Oakland Counties, Michigan. *

Cooper's Hawk is a common summer resident in both Wayne and Oakland counties, being exceeded in abundance only by the Red-shouldered (*Buteo borealis*) It is well known to the farmers as the "chicken-hawk," and most farmer boys pride themselves upon the number they have killed. It is the most dashing and spirited of our summer hawks becoming, however, like most other hawks, commonest in August and September. Undoubtedly more than 80 per cent of the depreda-

tions committed upon domestic poultry may be attributed to it. Bendire says: "Cooper's Hawk must be considered as one of the few really injurious Raptors found within our limits, and as it is fairly common at all seasons through the United States, it does in the aggregate far more harm than all other hawks. It is well known to be the most audacious robber the farmer has to contend with in the protection of his poultry, and is equal in every way both in spirit and dash, as well as bloodthirstiness, of its larger relative, the Goshawk, lacking, however, the strength of the latter, owing to its much smaller size. It is far the worst enemy of all the smaller game birds, living to a great extent on them as well as on smaller birds generally. It does not appear to be especially fond of the smaller rodents. These as well as reptiles, batrachians, and insects seem to enter only to a limited extent into its daily bill of fare, and unfortunately it is only too often the case that many of our harmless and really beneficial hawks have to suffer from the depredations of these daring theives." However, this has always been the most interesting of hawks to me, perhaps because the first I ever shot. To relate the story: It was late in the afternoon on a September day. A friend and myself were returning from a collecting trip rather disappointed with our day's "catch," when we noticed a hawk sailing through the air. Suddenly he seemed to drop into an apple tree at the end of a long field. We crept to within gun range, when he suddenly sailed from the tree. I fired bringing him to the ground· When we got up to him he turned over on his back and showed signs of fight. Not knowing the strength of a wounded hawk, I went to pick him up, when at the same time he took a gentle hold on my hand, and would not let go until we killed him.

Mr. J. Claire Wood speaks of a female Cooper's Hawk in his collection which was taken in Greenfield Tp., Wayne County. The bird had dashed through the laths of a hen coop in pursuit of some small chickens, and was caught by the farmer before it could escape. It was very poor in flesh, and its stomach was empty, which probably explains its daring ferocity. Mr. Wood also records the following sets of eggs of the Cooper's Hawk taken by him.

"May 6, 1900. Nest situated about 45 feet from the ground in the main fork of a slanting beech, in higher portion of a thick woods in Van Buren Tp., Wayne County. This nest contained four eggs.

"May 5, 1901. From same pair of birds, nest also 45 feet from the ground in fork of young beech, the trunk of which was not more than nine inches in diameter. This nest was not more than 100 feet from tree containing old one. The old bird was not at home, but put in her appearance as I ascended the tree, and was very demonstrative, sweeping down within a few feet of my head. Was induced to climb by noticing bits of down clinging to nest and surrounding limbs, which is invariably the case, I believe, when incubation has commenced. This nest contained five eggs somewhat incubated.

"May 11, 1900. Rather open oak woods bordering railroad track, Clarkston, Mich. The continued persistant cries of this bird induced me to look for the nest. There was a great many old crow nests in the woods and I climbed to several before discovering the one containing the eggs, which were five in number, and very slightly incubated.

"The most remarkable part of this take was the fact that while it rained steadily all day, the hawk had not been on the nest for some hours, for the nest was soaking wet, and the eggs cold, nevertheless, she was very solicitous over the welfare of her home."

It has been stated that a visit to the nest of a Cooper's Hawk would cause the parents to abandon it, however, I am inclined to differ judging from a pair I had an acquaintance with last spring. On April 21st, while out collecting birds, we met a farmer of whom we inquired if he had seen any hawk nests. He replied in the affirmative, and said that a pair of "duck hawk" had taken up their abode in a nearby woods, pointing out about where he supposed it was. He said that but a couple of days before, he had passed the tree, and that the old ones flew around, saying some very inpolite words (in hawk). We made directly for the spot, and found the nest in the crotch of a beech tree 33 feet from the ground, but the tree was too hard to climb. On April 25th, we returned with irons, and climbed to the nest. It contained one egg which was cold and dirty, and as no birds were around I concluded that it was the egg of a Red-shouldered hawk which had deserted the nest on account of the farmers interrupting it. However, I took the egg home and upon washing it, found it was the egg of a Cooper's hawk. I blew it and found it fresh. On April 28th, I again visited the nest on which the old female was sitting, but she flew in response to a tap on the trunk of the tree. There was one egg in the nest, which I took and replaced it with that of a chicken. May 5th, I returned to the nest and found two more fresh eggs beside that of the hen. I took these eggs home leaving one more hen's egg in the nest. On May 19th, I returned to find one more hawk's egg, it was highly incubated.

You will probably be interested to know what became of the chicken eggs. What would the poor hawk do if after setting three weeks, find that she had only raised—her breakfast, but this could not be, as the eggs were hard boiled intended for my lunch, and upon my last visit, I threw them from the nest.

ALEX. W. BLAIN, JR.

* Read before Chapter 176 Detriot B. Agassiz Association. Oct. 4, 1901.

The Food Supply of the Brown Thrasher and Mocking Bird.

BY C. C. PURDUM, M. D.

THE BROWN THRASHER:—This bird is found most plentiful in the Carolinian zone of the U. S., but is found breeding from New England to the Dakotas. Like the birds which we have last considered, this bird rears two broods in one season. Being more retiring in its habits than the catbird, one would naturally look to find the thrasher less destructive than the latter. As a matter of fact it is, but there is no great difference in the varieties of cultivated fruit which it devours, although the quantity is much less.

Perhaps the variety of food taken by this bird from the garden is greater than any heretofore considered by us, consisting as it does of a rather diversified list of fruit, viz., peaches, plums, apples, pears, strawberries, black and red raspberries, grapes and cherries; all of which are marketable and a great source of income to the farmer. Naturally therefore the fruit grower, observing these birds feeding in his trees and shrubs, looks upon them with no favorable eye, and contemplates their destruction as a thing to be desired. He should, however, look farther than the loss of a few fine cherries or grapes, and observe the bird closely, when he would find that for each peck at a grape or any of the other fruit, the bird will eat a dozen or more noxious insects, taking them as the body of the meal and the fruit as a side dish.

This paper on the food supply of the Brown Thrasher, is based upon the report of the examination of one hundred and twenty-one stomachs, collected as far west as Kansas and covering a range from Florida to Maine. This investigation was conducted by the U. S. Department of Agriculture during the years of 1893 and 1894, and the result may be roughly estimated as follows:

Animal matter, 63 per cent.
Vegetable matter, 35 per cent.
Mineral matter, 2 per cent.

Of the animal food, beetles are by far the most relished, forming nearly one-half of the whole amount. Next are the grasshoppers and crickets (Orthoptera), forming about one-fifth of the animal food consumed. Then comes the caterpillars, forming somewhat less than one-fifth, and then the spiders, thousand legs and bugs, forming the remaining one tenth.

Only eight per cent. of the beetles consumed are among the beneficial predacious ground varieties, and by the consumption of a great volume of crickets, caterpillars, weevils, click and leaf beetles, a ratio is established, decidedly in favor of the Thrasher.

Before rendering a complete verdict on the Thrasher, we must follow his food supply through the entire season. In the case of the Wren we found this bird subsisting on an animal diet almost entirely throughout the entire season. With the Thrasher it is different; he changes his diet with the ripening of the fruit, and as he eats more fruit he takes a smaller number of insects, and vice versa. For instance: Early in April when the Thrasher first arrives from the South, animal food is much more plentiful and the Thrasher consumes at least, three times as much animal food as vegetable, and as the insects are very plentiful even before the vegetable food is ripe, the excess of animal food continues and increases until about the latter part of May it reaches a maximum of 7 to 1.

When the vegetable element begins to ripen, the proportion of animal food to fruit begins to lessen, and about the middle of August to the first of September, the ratio changes gradually until it stands inversely 2 to 1. At no time however does the proportion exceed this two to one ratio, leaving quite a heavy balance to the end of the season on the side of the animal food.

Notwithstanding the fact that the maximum of fruit consumed, is reached in July, we find that a large number of beetles and ants are also devoured during this month.

After the 20th of June the caterpillars which have been very largely consumed up to this time, begin to fall off in numbers, and their place to be taken by mulberries, buckthorn, etc., and while a few are found in the stomach constantly, still after the above date they fail to increase to any marked degree during the remainder of the season.

The above looks somewhat dark to the value of the Thrasher economically, but after all, out of the general proportions of 25 per cent. of vegetable food, we find that only 11 per cent. of it is cultivated, and of this, eight per cent. is fruit and the rest grain.

Mr. Sylvester D. Judd of the Department of Agriculture, says of this bird, "The economic relation of the Brown Thrasher to agriculture may be summed up as follows: Two thirds of the birds food is animal, the most of the vegetable food is fruit, but the quantity taken from cultivated crops is offset by three times that quantity of insect pests. In destroying insects, the Thrasher is helping to keep in check organisms, the undue increase of which disturbs the balance of nature and threatens our welfare. A good example of the result of such irregular increase is to be had in the fluctuations of the Rocky Mountain locust.

The Brown Thrasher in its present numbers is a useful bird, and should be strenuously protected from gunners and nest plundering boys."

THE MOCKING BIRD (*Mimus polyglottos*):—The amount of data regarding the food supply of this bird is small, and although its range is large, and in many localities, especially in Texas, the bird occurs in great numbers, the investigations—what few have been made

—have not been carried out systematically. What has been determined can be stated concisely as follows:

The animal food is much less in quantity than the vegetable, and consists entirely of insects and spiders. The insects include grasshoppers, caterpillars, beetles and ants, while the vegetable food is composed of the pulp of the larger fruits, as pears, plums, apples, etc., together with large quantities of the seeds of berries of the smilax, sumac, mulberry, bayberry, pokeberry, black alder, red cedar Virginia creeper and poison ivy.

The writer will be pleased to receive either authentic notes on the contents of the stomachs of birds shot, or established facts in regard to the food supply of this bird, and will later embody them in a report, if sufficient data can be procured to prepare an article of value. The concluding paper will deal with the Meadow Lark (*Sturnella magna.*)

An Example of Maternal Solicitude

Many are the stories told in prose and sung in rhyme of maternal devotion among animals and birds. So strongly is the maternal instinct developed that it leads to acts of sublime heroism that challenge the admiration of the world. Then it has its amusing side, as when a brooding hen will patiently incubate a china door knob without one ray of suspicion of the hoax being played upon her.

An example of sublime, though rediculous devotion came under my ken last summer which may be worth recounting. I made a professional visit to one of our distant mining camps, high up in the mountains. After my patient's wants were ministered to, the Superintendent, who knew of my propensity for robbing birds nests, called one of the men and requested him to lead me to the nest of a Humming Bird that had been discovered a few days previously. The path led us up the steep mountain-side about one-half mile, through the dense white fir and alder thicket. The nest was saddled upon the body of a small fir, about four feet from the ground. I was delighted to find the bird at home and ready for callers. She was a Calliope (Trochilus Calliope) one of the rarer species with us, and as my guide remarked that she had been upon the nest three days previously, I felt sure that a fine set of eggs would shortly be added to my cabinet. I gently shook the bush with the intention of causing her to vacate Not any vacate there. On the contrary, she settled down into the nest with a sort of fight-it-out-on-this-line-if it-takes-all-summer air that was highly amusing, I then gently lifted her up by the beak despite her scoldings. She dug her feet into the lining of the nest in such a manner that I feared to break the eggs which I could not see, so was obliged to desist.. Reversing the plan of battle, I lifted her by the very brief condal appendage projecting above the rim of the nest. This was too much of an indignity for even an outraged hummer, so with an angry buzz she took wing and perched upon a tree not many yards away. I looked down at my treasures and no treasures were there. Not an egg. A pretty little nest of black moss and tree down but nothing that would in the future add to the bird population of Idaho. Maybe some of your readers can tell me what that bird had in her mind. If so, I will gladly furnish stamps for I very much desire to know. Yours oologically,

CHAS. S. MOODY.
Orofino, Idaho.

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