

Seiurus noveboracensis (Northern Waterthrush). One banded 10 November recaptured 5 December (4 weeks); another banded 10 November recaptured 7 January (9 weeks). A total of 8 birds were banded. This species may be seen through the winter in the Almirante region.

Icteria virens (Yellow-breasted Chat). One bird banded 20 October recaptured 4 December (7 weeks); this specimen was the only one taken.

Piranga rubra (Summer Tanager). One bird banded 10 November recaptured 15 November (1 week). A total of 7 specimens were banded.

An interesting facet of this bird-banding at Almirante is that almost no migrants of any kind were taken by the Gorgas workers after about mid-January until the early days of spring. According to Dr. Galindo, the autumn migration begins noticeably about the last of September, hits a peak in the last week of October, falls off rapidly thereafter and is essentially over by about mid-November.

I wish to thank Dr. Galindo, Mr. Eustorgio Mendez and others of the Gorgas Memorial Laboratory for their generous cooperation; also Dr. Gustavo Engler and others of the Chiriqui Land Company (United Fruit Company) for the kind use of their facilities at Almirante. — Horace Loftin, Florida State University Canal Zone Program, Box 246, Ft. Clayton, Canal Zone.

An Interesting Black-crowned Night Heron Recovery.—On May 27, 1961 at Rookery Island in the Susquehanna River near Washington Boro, Lancaster County, Pennsylvania, I banded 25 nestling Black-crowned Night Herons (*Nycticorax nycticorax*) (D. S. Heintzelman, *Atlantic Naturalist*, 1961: 241-242). One of those birds, number 617-18314, was recovered on January 11, 1962 at Andytown, Florida, a distance of approximately 975 miles from the banding station. The bird was about 240 days old at the time of recovery.—Donald S. Heintzelman, 629 Green Street, Allentown, Pennsylvania.

Can Blue Jays swim?—On July 7, 1963, I startled three Blue Jays (*Cyanocitta cristata*) that were drinking or bathing at the edge of our farm pond. They immediately flew across the pond. Two of them made the crossing safely and perched in a nearby tree. The third jay fell into the pond about 25 feet from shore. As it was impossible for me to reach the jay, I expected to see it drown. Instead the jay propelled itself through the water with a hopping motion — pushing the water with wings and feet. Several times the water washed over its head and as its mouth was open all the while, it must have taken in a considerable amount of water. It finally reached shore but was so wet and exhausted it had difficulty pulling itself out of the water. I started to help it ashore but my approach caused it to go back into the water so I backed away and watched from a little distance. The jay then with much effort reached land where it remained for almost an hour. Interestingly enough this was a juvenile Blue Jay.—Mrs. J. R. Downs, So. Londonderry, Vt.

RECENT LITERATURE

BANDING

(See also No. 8)

1. **IOIS** (International Ornithological Information Service). *The Ring*, Series B. 1963. We welcome a new venture of Dr. W. Ryzdewski (Laboratory of Ornithology, Sienkiewicza 21, Wroclaw, Poland) — a quarterly journal to be published entirely separately from the present *Ring*, and not limited to bird banding (ringing). He proposes to include details on, and news of, organizations, magazines, laboratories, bird observatories and field stations, museums and collections, banding (ringing) centers, zoos and other collections of live birds, national parks and reserves, expeditions, education, legal developments, congresses and conferences anniversaries, personal news, new birds, forthcoming books, new books, phonograph (gramophone) records, grants offered, requests for cooperation, aviculture, carrier pigeons, waterfowl and game birds, and "miscellaneous".

Most of the information included in the first issue can be found in print in at least one other place. However, even the reader who subscribes to several journals

from outside his own country will find much that is new here. Even compared to the resources of a major library, the new journal has the advantage of concentrating data in one place. Journals (including *Bird-Banding*) usually don't repeat all basic information about the journal and its sponsors in every issue, for economic reasons. An occasional book offers a compilation of information such as the various bird observatories, but such a compilation starts to become obsolete in detail while the book is still at the printer.

Readers in the U. S. may subscribe to the new journal (at \$1.50) through European Publishers Representatives, Inc., Times Building, 1475 Broadway, New York 36, N. Y. (the same annual price, and same subscription agent, as for *The Ring*, Series A. Orders for the new journal should plainly mention *The Ring*/IOIS or *The Ring* series B, to avoid confusion between the two series.—E. Alexander Bergstrom.

2. Proposed Modifications of Age and Sex Reporting. Robert L. Pyle. 1963. *EBBA News*, 26(3): 98-100. An open letter to the bird-banding laboratory at Patuxent, Maryland, suggesting that the present system of identifying symbols be refined to make it possible to show how precisely the bander identified age or sex. We will always have some variation in the ability of the banders to make such identifications, as new banders become active. Even those of us with a fair amount of experience generally vary in competence to some extent, from one group of birds to another, depending on what our experience has involved. The publication of data sheets on identifying birds by age and sex will raise the general level of competence, but at the moment there are many groups where we either lack exact distinguishing marks or where special competence is needed to distinguish the birds. Two obvious examples are the *Empidonax* flycatchers and the goldfinches.

The system proposed would have the following symbols for "age" (in addition to N for nestling, L for local and I for immature):

A for adult: "Birds determined not to have hatched in same calendar year as banded. Hatched in preceding year, or earlier."

U for unknown: "could be A or I, but not L or N."

-- for unknown: "could be A, I, L or N (for cases where age date is lost or not recorded)."

For some banders, further refinements would be available: ". . . when date of banding can be supplemented with morphological criteria to determine age more accurately than indicated by 'A', 'the following additional categories would be available:

S = Subadult: birds determined to have hatched in the year preceding the calendar year of banding. Also, may be used for birds possibly hatched two, three or more years back, but which have not yet reached full adult plumage. Additional notation could be given if it can be determined fairly definitely that the bird is in its 2nd year, 3rd year, etc.

E = Elder: birds in full adult plumage determined to have hatched in second prior to calendar year of banding, or earlier.

When S or E is reported, the criteria used should be indicated in Remarks.

"For birds hatching in late fall or winter before January 1, the following definitions would be more appropriate:

I = Immature: determined to be less than one year old.

A = Adult: determined to be about one year old, or older.

S = Subadult: determined to be more than one year old, but less than two years old, or not yet in full adult plumage.

E = Elder: determined to be about two years old, or older, and in full adult plumage.

(It is appealing to consider using these distinctions for all species, thus avoiding entirely the artificial January 1 cut off date.)"

While the modifications have much to recommend them, I am not at all sure that definitions of this degree of complexity can be sufficiently precise for general use among banders. The designations should be patterned on whatever general

system of plumage description is dominant (as most identification by age and sex relies so heavily on plumage), and thus depends on the ultimate fate of the Humphrey-Parkes system. From the standpoint of data handling (particularly by punched cards or tape), it is desirable to continue to use terms tied in some way to the calendar year. Mechanically, it is undesirable to mix signs and letters as symbols (this could be remedied by using a letter such as "Z" instead of "—". The use of "subadult" for birds "determined to have hatched in the year preceding the calendar year of banding" may be quite appropriate for groups like the gulls, which attain full adult plumage only after several years of transition, but doesn't fit the many small passerines which are fully adult in all respects a year (or less) after hatching. The group of "birds hatching in late fall or winter before January 1" is surely a minute fraction, as far as the continental United States is concerned.

A more general consideration is that this system would leave birds of the same age and sex divided under two or more categories, depending on the species and the experience of the observer, thus making tabulations and comparisons more difficult, as an offset to greater accuracy in some reports.—E. Alexander Bergstrom.

3. Operation Baltic 1962. P. Busse and M. Gromadzki. 1963. *The Ring*, 3: 195-197, May, 1963. The idea of the fall netting of migrant passerines by a string of cooperative trapping and banding stations continues to spread. In autumn 1960, one station near Gdansk (Danzig) banded 1,294 birds. In autumn 1961, six stations banded 10,534 birds, obtained one direct recovery between netting stations, and netted three birds with foreign rings. To date, 65 birds banded here have been reported outside Poland, headed by 21 [European] Robins (*Erithacus rubecula*).

In the autumn of 1962 the operation was sponsored by the Laboratory of Ornithology of Warsaw (Wroclaw) University. The ten stations covered the entire coast, each for a minimum of a month in September and October. Each used "fifteen to twenty-five steelon [? some synthetic fiber] mist-nets of Polish make". In all, 25,113 individuals of 109 species were banded; *Erithacus rubecula* led with 11,771 individuals, followed by the Goldcrest (*Regulus regulus*) with 2,039.

Of four direct recoveries between the netting stations, the most striking is that of a Robin which covered 135 km. in 2 days in September, near the western end of the Polish coast.—E. Alexander Bergstrom.

4. Purple Martins. Ralph K. Bell. 1963. *EBBA News*, 26(2): 43-49. In Greene County, Pennsylvania, 1,262 Purple Martins (*Progne subis*) were banded, either in the nest boxes or in mist nets placed nearby, from 1954 through 1962. In the northeastern U. S., this swallow seems to require a nest box with 10 or more compartments, each 6x6x6", placed on a post in the open, preferably 15 to 18' above the ground. Keeping the entrance hole down to 2" or less helps eliminate predation by Screech Owls. Starlings and English Sparrows are captured by a simple nest-box trap fastened to the martin house, rather than being trapped in the martin house itself. A four percent Malathion dust seems to eliminate the serious problem of mites in the nesting house (do not use DDT). A simple, wire, trip-step trap is placed inside some of the martin house compartments (only six compartments out of ten, to avoid abandonment of the house entirely), tripping automatically as the bird enters. The device is bolted in place when needed, rather than kept in place permanently. Bell suggests having "two boxes that are at least 50 yards apart, and then use traps in just one of them."

Thirteen martins banded as nestlings, and 21 banded as adults or sub-adults, were recaptured in later years. In addition, one banded as a nestling in 1958 was caught on July 24, 1962 at Marinette, Wisc., about 500 miles to the northwest. Another immature, netted July 14, 1957, was found at Bell Farm, Kentucky, on about June 30, 1959. An adult male, trapped by Bell on April 20, 1958, was found dead on May 15, 1960, in the yard of a martin box owner at Saxonburg, Pa., about 80 miles north of the place of banding.—E. Alexander Bergstrom.

5. Capturing Sleeping Flickers. Leroy Wilcox. 1963. *EBBA News*, 26(3): 94-95. During the fall of 1962, 44 Flickers (*Colaptes auratus*) and a scattering of other woodpeckers were captured, just before daylight, sleeping on telephone poles along the treeless outer beach along Shinnecock Bay, Long Island, N. Y. The majority were sleeping from 4 to 6 feet above the ground, and a few

were lower, so that they could be picked off by hand. Some birds 8 to 10 feet above ground were caught with a hand net. Wilcox patrolled the area by car, stopping to walk back after spotting a bird, and taking pains to be quiet. Some of the birds were awake but could often be taken by approaching from behind. "During September I caught 37% of those seen, while during October I caught 65% due to improvement in technique of catching them"—E. Alexander Bergstrom.

6. Common Grackle Banding from Kason, Minnesota. Rev. Forest Strnad. 1963. *Inland Bird Banding News*, 35(1): 10-11. Data on 745 *Quiscalus quiscula* banded since 1958. Only one bird has been recovered outside Minnesota, at Senatobia, Miss. The majority were taken in an all-purpose ground trap, the remainder in Potter traps. "The bait used for the most part was bread crumbs which were old bread run through a shredder in a bakery." Other banders, such as Jeff Gill, have had success with bread as a bait for this species, but usually broken into pieces rather than as crumbs; probably the grackle has no preference. This type of bait gets rather messy in wet weather, and also may attract neighborhood dogs to a ground trap unless the trap is protected in some way. However, it has economic advantages over sunflower seeds, which my Connecticut grackles have unfortunately developed hearty appetites for (as the active seasons for banding grackles and "winter" finches overlap by several weeks).—E. Alexander Bergstrom.

7. Mist Netting Saw-whet Owls. Peter Petersen, Jr. 1963. *Inland Bird Banding News*, 35(1): 15. At Davenport, Iowa, two were netted in 1959, three in 1960, three in 1961, and three in 1961, and three in 1962, in mist nets with 1½" mesh (= NEBBA type A), "during the night in the creek-bottom ragweed and willow habitat of which my net site consists". In addition, in 1961 seven more were taken in a single net with 2 3/8" mesh (= NEBBA type C), and five more in similar nets in 1962. It is not quite certain whether the greater efficiency of the latter nets was based on the mesh size or on net placement, over the creek (high enough so that an unexpected heavy rain could not raise the water level enough to reach the bottom of the net). It appears that the owls follow the creek while hunting. Dates of capture ranged from October 5th to November 8, but especially the last week of October and first week of November. The owls were not harmed by being in nets during at least a part of the night.—E. Alexander Bergstrom.

MIGRATION

(See also Nos. 9, 12, 13, 14, 22.)

8. California 'Crowned' Sparrows Return from Louisiana. L. Richard Mewaldt. 1963. Various sparrows of the genus *Zonotrichia* winter in large numbers at San Jose, California, and show high rates of returns from previous years. Mewaldt and his colleagues have studied this population since 1954, (see, for example, *Bird-Banding*, 34(2): 100-101).

"A total of 414 birds were displaced by commercial aircraft from San Jose, California to Baton Rouge, Louisiana during the 1961-62 winter season. . . . Releases at Baton Rouge of fifty birds were made on each of 28 October 1961, 5 December 1961, and 2 February 1962. On 14 April 1962, 264 birds were released. Survival in shipment was excellent. Only two birds were received dead at Baton Rouge. . . .

"Releases consisted of 233 Puget Sound White-crowned Sparrows (*Zonotrichia leucophrys pugetensis*), 79 Gambel White-crowned Sparrows (*Z. l. gambelii*), and 102 Golden-crowned Sparrows (*Z. atricapilla*). Sixty-seven of the *pugetensis* shipped had already returned to the banding station after having been gone at least one breeding season. Two *gambelii* and ten *atricapilla* had also returned after at least one season's absence from the banding station. It is probable that our *pugetensis* breed in the vicinity of Vancouver, British Columbia. Most *gambelii* and *atricapilla* breed in northern Canada and in Alaska.

"Birds were shipped in cardboard shipping cages. Food and water were continuously available. . . . At least some of the birds fed and watered themselves readily. . . . they were released in suitable habitat. . . . on the east bank of the

Mississippi River. Time between confinement in the shipping cage and release was usually about 40 hours."

"All birds in the 1961-62 releases were marked with dyes. . . . most birds had dispersed from the release area within a few days. A pronounced tendency of the birds to move northward immediately upon release was noted on 14 April."

On "24 June 1962, . . . one *pugetensis* . . . of the 14 April release was trapped . . . at San Jose. This was the first *Zonotrichia* to appear in June at the station in its eight summers of operation. . . . He weighed 29 grams, about 2 grams above his mean weight . . . Because he appeared to be in migratory condition in June, and because he was not detected between 24 June and 27 October, I suspect he spent July and August in his nesting territory . . . It is most reasonable to assume that this bird returned directly to San Jose . . . an airline distance of approximately 1,800 miles. The effective rate of return was at more than 25 miles per day over terrain not frequented by the race *pugetensis*. It seems inescapable that this sparrow 'homed' to his winter range from a remote and unknown release point. Bi-coordinate navigation of a very effective nature seems to be possessed by this bird."

"As of 31 December 1962, 21 of the Baton Rouge releases have been re-trapped . . . in San Jose. . . . certain trends are appearing in the data. . . . a greater percent (10%) of the strongly migratory race *gambelii* have returned than of either *pugetensis* (3%) or *atricapilla* (6%). . . . 8% of adults have returned compared to but 3% of birds less than one year old at the time of displacement."

An interesting sidelight is that during the winter of 1961-62, the banding station at San Jose handled about three times the usual number of *Zonotrichia*. "Repeated removal of the 'hard core' of dominate birds coming to bait at the banding station probably permitted population pressure to fill the vacuum thus created."

Starting in September, 1962, four shipments totalling 451 *Zonotrichia* were released at Laurel, Maryland, each with a color band in addition to the numbered band. Anyone with a sight report or other data is urged to write to Dr. Mewaldt at the Dept. of Biological Sciences, San Jose State College, San Jose 14, Calif.—E. Alexander Bergstrom.

LIFE HISTORY

(See also No. 13)

9. Contributions to a Comparative Biology of Australian Grass-finches. (Beiträge zu einer vergleichenden Biologie australischer Prachtfinken (Spermestidae).) Klaus Immelmann. 1962. *Zoologische Jahrbucher, Abteilung für Systematik*, **90**: 1-196. (4½ page summary in English.) A comprehensive, detailed treatise based on a year's experience with 18 species of Estrildinae in Australia, as well as observations on 13 species in captivity in Europe. Eight species (p. 76) are known to drink by sucking water as pigeons do. Thus "the bird can exploit even the smallest amount of water; . . . sucking can be regarded as an adaptation to life in a dry, open country." Song is without territorial significance; its principal use is in courtship. In some species mutual preening occurs, as well as "clumping" in dense rows throughout the year.

"Pair-formation takes place in the flock." The male selects the nest-site; he brings material while his mate fashions the structure. This is usually domed with a side entrance and an entrance tunnel, but *Chloebia* breeds in hollow trees and usually builds no nest. Both sexes incubate in periods of 1-1½ hours, but when the temperature of the nest-chamber exceeds 100° F., both adults absent themselves. Incubation lasts 12½ - 16 days; fledging 21 days and further parental care another week.

"The juvenile moult starts at 8 weeks and is complete at 12-14 weeks. Courtship and nest-building behaviour develop very early in young Grassfinches and often overlap with foodbegging from the parents. By the beginning of the juvenile moult these activities have generally disappeared again, but in *Taeniopygia*, *Emblema*, and *Chloebia* they merge gradually into true reproductive behaviour. These species may start the first clutch at 11 weeks of age, i.e. before the end of the juvenile moult and there seems, therefore, to be no refractory period. Such early maturation is probably an adaptation to the irregular breeding season."

The final discussion concerns the evolutionary relationships of the Australian Grassfinches, their affinities with the Asian species, and the history of their invasion into Australia.

This is a notable contribution, well worth careful study by all those interested in life history subjects.—M. M. Nice.

BEHAVIOR

(See also Nos. 9, 21)

10. Experiments on Species Discrimination in Myiarchus Flycatchers. Wesley L. Lanyon. 1963. *American Museum Novitates*, No. 2126: 1-16. Field experiments were carried out on Great Crested Flycatchers (*Myiarchus crinitus*) in New York and on three species in Arizona — Olivaceous Flycatcher (*M. tuberculifer*), Wied's Crested Flycatcher (*M. tyrannulus*) and Ash-throated Flycatcher (*M. cinerascens*). "The response of territorial birds to various combinations of audio signals afforded by playback of prepared tapes of five species of *Myiarchus*, and to visual signals provided by mounted specimens of *Myiarchus* and non-*Myiarchus* species, was observed and photographed. . . . Each of the four species demonstrated an ability to discriminate between the vocal repertoire of five species of *Myiarchus* and reacted positively only to the repertoire representative of its own species." Eight photographs show the experimental set-up and the vigorous attacks on the mounted specimens by the breeding flycatchers. An interesting paper showing clearly that "differences in vocalizations do function as the basis for species discrimination by these birds."—M. M. Nice.

11. Color Marking Disrupts Pair Bonds of Captive Mourning Doves. Arthur I. Frankel and Thomas S. Baskett. 1963. *Journal of Wildlife Management*, 27(1): 124-127. Coloring the heads of female *Zenaidura macroura* with yellow airplane paint resulted in breaking the pair bond in these pen-reared birds. The males stopped giving nest coos and reverted to some 400 perch coos — the regular song — per 2½ hours morning and evening. It has often been observed that birds recognise each other by facial characters, hence "copious" application of a brilliant color to the head might be expected to upset the bird's mate, whereas the placement of color on other parts of the body might well evoke no response.—M. M. Nice.

12. A Naturalistic Study of Imprinting in Wood Ducklings (Aix sponsa). Gilbert Gottlieb. 1963. *Journal of Comparative and Physiological Psychology*, 56(1): 86-91. The behavior of Wood Duck hens and ducklings was studied by means of tape recorders, microphones, and a glass sided nesting box. The mother begins to vocalize when the eggs are pipped, 20-36 hours before the exodus. "The rate of the hen's vocalizations increases from less than one call per 5 sec. during the pipping and hatching period to about five calls per second as the time of the exodus draws near." The rate and amplitude of her calls increase but no qualitative change is discernible. At the time of leaving some of the ducklings in the observation box climbed the walls to the light bulbs, others to the exit, but eventually all left the nest.—M. M. Nice.

13. Ethology of the Tree Sparrow. (Zur Ethologie des Feldsperlings (*Passer m. montanus* L.)) Gisela Deckert. *Journal für Ornithologie*, 103(4): 428-486. A 4-year study on 16-19 colorbanded pairs, as well as of two young hand-raised from the age of 7 days, that nested the following year and raised three young. The birds nest in loose colonies, and after breeding unite in large flocks. Pairs are permanently mated. Differing behavior is described in regard to hawks, owls, cats, and squirrels. Incubation, performed by both sexes, lasts 11-12 days; fledging 16 days, and post-nestling care some 14 days. Independent young have a strong urge to examine holes, and when a hole contains nearly fledged birds, to enter and to try to creep under the rightful inhabitants. Vocalizations, reproductive behavior, development of the young, molt, and other topics are discussed at length in this admirable monograph.—M. M. Nice.

14. The Behavior of the Shag. Barbara K. Snow. 1963. *British Birds*, 56(3): 77-103; (5): 164-186. A 4-year study of a breeding colony of *Phalacrocorax aristotelis* on the island of Lundy, Bristol Channel. "Postures and movements are

of particular importance as the Shag's vocal repertoire is extremely limited . . . Displaying males recognise the sex of other Shags from their posture." Both parents incubate the eggs, and brood, feed and guard the chicks. Young birds spend from 45 to 59 days in or near the nest, and are fed by their own parents for 15 to 30 days after going into the sea. "Experiments in which chicks were exchanged between nests indicated that strange chicks are accepted up to the age of about 29 days, and that after this age (at which sex differences begin to become apparent) strange chicks are more likely to be accepted by an adult of opposite sex." This is an outstanding study, detailed and comprehensive, illustrated with excellent photographs and sketches.—M. M. Nice.

15. Behaviour of Dippers at the Nest During a Flood. James Alder. 1963. *British Birds*, 56(3): 73-76. Heavy rains had cut off access to a nest of *Cinclus cinclus* situated under an overhanging bank; the parents solved their problem by swimming and diving under the overhang with food for the young.—M. M. Nice.

16. Comparative Observations on the Behavior of Domesticated Zebra Finches in Europe and the Wild Parent Form in Australia. (Vergleichende Beobachtungen über das Verhalten domestizierter Zebrafinken in Europa und ihrer wilden Stammform in Australien.) Klaus Immelmann. 1962. *Zeitschrift für Tierzüchtung und Zuchtungsbiologie*, 77(2): 198-216. (English summary). The author concludes: "Behavioural changes in domesticated animals are concerned with the frequency of instinctive activities, and with the selectivity in the response to optical and acoustical releasers. They are not concerned with innate motor pattern itself. In this respect, they differ markedly from interspecific distinctions. The influence of domestication is caused by the lack of natural selection and by the general scarcity of external stimuli in captivity."—M. M. Nice.

17. Observations on Sleeping Rhythm and Sleeping Behavior in Three African Ostriches. (Beobachtungen über Schlafrhythmus und Schlafverhalten an drei afrikanischen Straussen.) Klaus Immelmann. 1962. *Der Zoologische Garten (NF)*, 23(3/6): 215-228. Three half-grown *Struthio camelus* at the Frankfurt Zoo were watched throughout five nights and their behavior analyzed in a table. They slept with their necks stretched out flat before them, interrupting their rest some 12 times during the night for sessions of feeding.—M. M. Nice.

18. Head-scratching in the Psittaciformes. J. le Gay Breton and K. Immelmann. 1962. *Ibis*, 104(2): 169-174. A detailed table on the head-scratching methods in nearly 100 species of parrots shows that this "behaviour pattern is a valid taxonomic character." An interesting discussion is given of the subject in parrots and other birds and some evolutionary problems are outlined.—M. M. Nice.

19. The Biological Meaning of the "Purposive" Use of Learned Sounds by Birds. (Ueber die biologische Bedeutung der "zweckdienlichen" Anwendung erlernter Laute bei Vögeln.) Eberhard Gwinner and Johannes Kneutgen. 1962. *Zeitschrift für Tierpsychologie*, 19(6): 692-696. (Summary in English.) "When their partner was absent, the individuals of two captive Raven pairs (*Corvus corax*) and three Shama pairs (*Copsychus malabaricus*) frequently uttered sounds or song elements which were otherwise principally or exclusively produced by the partner. On hearing these sounds, the bird so 'named' returned at once, whenever it was possible. This 'naming' of desired objects is not different in principle from the 'purposive' speaking of parrots."—M. M. Nice.

PHYSIOLOGY AND PSYCHOLOGY

20. Some Effects of Castration on a Migratory Sparrow (*Zonotrichia atricapilla*). Martin L. Morton and L. Richard Mewaldt. 1962. *Physiological Zoology*, 35(3): 237-247. After castrating, male Golden-crowned Sparrows in California were delayed in terminating prenuptial molt, by 2 weeks in 1960 experiments and by 6 weeks in 1961, involving a slower rate of feather displacement.

While both castrates and controls showed a marked weight increase from fat deposition, "the controls showed a greater amount of fat deposition, and for a 4-

week period in April and May of 1960 they were significantly heavier than the castrates. This suggests that the recrudescing gonad has a stimulatory effect on fat deposition and also supplements the remainder of the mechanism."

"Night restlessness (*Zugunruhe*) characteristically displayed by caged nocturnal migrants was intense in both castrate and control birds. Castrates, however, began this activity approximately a week later than controls, and they also reached their peak in activity later each night."

"When tested in orientation cages, castrates exhibited enough correctly oriented activity to help substantiate their night restlessness as being true migratory behavior."

These experiments support the thesis that gonads are not essential to the release of migratory behavior, in view of the way the castrates deposited premigratory fat and exhibited night restlessness. However, the experiments do suggest that gonadal recrudescence plays a part in the physiological preparation for migration, in view of the abnormal timing of prenuptial molt and night restlessness in the castrates, and the fact that they deposited less fat than the controls.—E. Alexander Bergstrom.

SYSTEMATICS

(See also No. 18.)

21. Isolating Mechanisms Between Populations of Traill's Flycatchers.

Robert Carrington Stein. 1963. *Proc. Am. Phil. Soc.*, 107(1): 21-50. Species of the genus *Empidonax* are notoriously difficult to identify except by song. Each species has only one song pattern, except for *E. traillii* (Audubon), the Traill's Flycatcher of the fifth edition of the A. O. U. checklist, but widely known in eastern North America as the Alder Flycatcher. This study was made to test the hypothesis that the two song patterns indicate distinct species, and was therefore made in areas of sympatry, where the two songs could be heard.

"The birds respond readily to the playback of their own song pattern, but pay little or no attention to a silent, visible, model.

"The advertising song series of the Fee-bee-o usually contains only a single pattern, the *fee-bee-o*. The song series of Fitz-bews includes three different patterns, the *creet*, typical *fitz-bew*, and *high fitz-bew*.

"No series intermediate between the two types has been recorded. Fee-bee-os may give a *pit* and a *wee-oo* in this order which sounds superficially like a Fitz-bew pattern. This may be one source of confusion in phonetic interpretations of intermediate songs.

"The two song types each breed over a broad geographical range. Fee-be-os occur farther north than Fitz-bews. A potential area of sympatry, occurring near the U. S.-Canadian border, exists across North America. It has been studied in New York, Ontario, Pennsylvania, and British Columbia. It is known to exist in Wisconsin also.

"The range of Fitz-bews has been expanding in the east in the past few decades, probably partly at the expense of Fee-bee-os."

"Each of the song types responds aggressively to playback of its own advertising song during the breeding season. Each of the song types usually does not respond aggressively to playback of the opposite type or other congeneric species. The song types have parallel series of similar sounds which seem to indicate the potential strengths of agonistic responses in territorial defence. Fee-bee-os are generally weaker in their responses to playback than Fitz-bews. This may indicate a higher threshold for aggression, a lower one for fear, or both, in Fee-bee-os. The sounds used in response to playback by both song types are considered to have been derived structurally from a sound having a relatively weak stimulus value, the *pit* or *whit*.

"The general habitat of the song types is somewhat different. Fee-bee-os occur along streams and lake edges in wooded areas, Fitz-bews along streams and lake edges in grassland areas. Fitz-bews 'prefer' willow and rose to other genera of shrubs as nesting sites, Fee-bee-os show no such selection. Fee-bee-os build their nests in shorter bushes and lower to the ground than Fitz-bews. Fee-bee-os build loose, bulky nests, similar to those of Song Sparrows. Fitz-bews build compact, cottony nests similar to those of Goldfinches or Yellow Warblers. Fee-bee-os appear to have a shorter breeding season. The peak of breeding appears about one week later in Fee-bee-os than in Fitz-bews.

"Specimens collected in sympatric areas indicate that Fee-bee-os have significantly longer wings, and wing formulae. "Fitz-bews have significantly longer bills. Fee-bee-os tend to have darker, greener backs and more green on the sides of the neck than Fitz-bews. The song types are more distinct in sympatric areas of the west than of the east. A longer period of contact between western populations is suggested as the probable explanation. A comparison between sympatric and allopatric populations of both song types shows character displacement in bill and tarsal length. It is also suggested for wing length and shape.

"The formula 'Bill length equals 7.95 plus 0.15 'I'' (in mm.) provided a maximum separation between specimens of known song type from areas of sympatry. In 90.6 per cent of the cases the bill length of Fee-bee-os fell short of, and that of Fitz-bews exceeded, the predicted value. Similar percentages were found for allopatric specimens." Wing formula "I" referred to above is the difference between two other wing formulae (following A. R. Phillips): "A" being the length of the fifth primary minus the length of the tenth (this may be either a positive or a negative number), and "B" being the length of the longest minus the sixth primary. Measurements used the chord of the wing, and considered the outermost primary the tenth.

"A review of information suggesting possible hybrids between the song types shows no *conclusive* evidence that hybridization has occurred."

The original name *Empidonax traillii* (Audubon) is assigned to the Fee-bee-o population. Stein suggests using as a common name "Traill's Flycatcher", as in the fifth edition of the A. O. U. checklist, with "Alder Flycatcher" as a second choice. Surely this is an opportune time to get rid of one of the less fortunate decisions of the checklist committee, by restoring "Alder Flycatcher" instead of the patronymic imposed in 1957. The great majority of those using a common name for the species knew it as the Alder Flycatcher, and the use of "Traill's" ran counter to the trend which minimized patronymics in the fifth edition compared to the fourth.

The description of the species (as limited to the Fee-bee-o population, but in all parts of its range) relies largely on song for recognition. "Measurements: Males (49 specimens): wing chord 68.5-76.5 (72.07) mm.; tail 55.0-63.6 (58.73) mm.; bill (measured from anterior nostril to tip) 7.6-9.3 (8.52) mm.; wing formula A . . . -5.8 to -0.1 (-2.83) mm.; formula B . . . 4.6-7.2 (5.64) mm. Females (8 specimens): wing chord 65.8-70.5 (68.63) mm.; tail 55.5-60.0 (57.89) mm.; bill 8.0-9.0 (8.50) mm.; wing formula A -2.4 to 0.0 (-1.7) mm.; formula B 3.4-5.5 (4.64) mm.

"Range: Breeds from Alaska, northern Mackenzie, Manitoba, central Quebec, and southwestern Newfoundland south to central British Columbia (Cariboo Parklands), southern Manitoba, northern and eastern Minnesota, northern Wisconsin and Michigan, southern Ontario, New York, and New England, and in the Appalachian Mountains at least to western Maryland (and possibly at higher elevations in some of the mountain ranges of the western United States). The breeding range has been decreasing along its southern and eastern border in recent years."

The type specimen of *E. T. brewsteri* is considered to be a Fitz-bew, so that in designating this population as a separate full species, *E. brewsteri* Oberholser is suggested, with "Willow Flycatcher" as a common name. This species would include the races *adastus*, *zopholegus*, *extimus*, and *campestris*.

The specific characters of *E. brewsteri* are "very similar to *Empidonax traillii*, but distinguished by its relatively longer bill, more rounded wings, and less greenish on the back and the side of neck. In males the tenth (outermost) primary is *generally* closer in length to that of the fifth, rather than the sixth (which is more characteristic of *E. traillii*). Specimens from the interior parts of North America are paler than coastal ones, and usually grayer (less brown). In the eastern part of its range the specimen's back may show some olive. The wing bars generally are darker, and not as prominent as in *E. traillii*."

"Measurements: Males (50 specimens): wing chord 67.5-74.5 (70.55) mm.; tail 56.3-63.9 (59.01) mm.; bill 8.0-10.3 (9.12) mm.; wing formula A + 1.9 to -2.9 (-1.26) mm.; formula B 3.2-6.4 (4.54) mm. Females (19 specimens): wing chord 64.4-70.2 (67.01) mm.; tail 54.0-59.9 (57.27) mm.; bill 8.4-9.5 (8.85) mm.; formula A 2.6 to -0.6 (-.73) mm.; formula B 2.3-4.3 (3.39) mm.

"Range: Breeds in the continental United States, except Alaska, most of New England, northern Michigan to Minnesota and some extreme southeastern

[sic — read “southwestern” for consistency with the range map] states. Its range extends along the plains of the Great Lakes into southern Ontario and western and central New York, and north into central British Columbia (Cariboo Parklands) and probably southern Alberta and Saskatchewan. The “range of this species seems to have expanded rapidly along its northeastern extremity in recent years.” —E. Alexander Bergstrom.

22. Geographic Variation in the Thrush *Hylocichla ustulata*. Gorman M. Bond. 1963. *Proc. U. S. Nat. Mus.*, 114 (3471): 373-387. On the basis of a review of 513 specimens of Swainson's Thrush, “birds from Alaska south through the Rocky Mountains to Colorado were found to have a grayish-olive dorsal coloration, while the upperparts of birds from the Athabaska River in Alberta eastward to Newfoundland and south to West Virginia exhibited a more reddish-olive coloration.”

Of the four races recognized by the fifth edition of the A. O. U. checklist, *H.u. ustulata* (Nuttall) is retained, but “restricted to the Pacific coast from northwestern Oregon to Juneau, Alaska”, as *H.u. oedica* Oberholser is considered valid. The latter breeds “from California (except the southeastern part) and southwestern Oregon (Klamath Mountains), north along the eastern slopes of the Cascades to northern Washington.” The winter range is “in Baja California, Arizona, and southern Mexico”.

H.u. swainsoni, the race of the trans-Canadian spruce belt, is retained, and extended to Newfoundland and Nova Scotia, as *H.u. clarescens* Burleigh and Peters is not considered sufficiently distinct.

The fourth race retains its territory but changes its name, as *H.u. incana* Godfrey is considered a synonym of *H.u. almae* Oberholser.—E. Alexander Bergstrom.

SONG

(See Nos. 9, 10, 12, 13, 19, 21.)

BOOKS AND MONOGRAPHS

23. The Breeding Birds of Switzerland. (Die Brutvögel der Schweiz). U. N. Glutz von Blotzheim. 1962. Verlag Aargauer Tagblatt AG, Aargau, Switzerland, 648 pp., ill. This avifauna of Switzerland is an eloquent testimonial to the rapid development of ornithology in Switzerland under the wise and tactful leadership of the Alfred Schifferlis, Senior and Junior. Edited and published under the aegis of the Swiss Bird Banding Station Sempach, it is the product of fruitful collaboration of all Swiss ornithologists, a team-work success unique for Switzerland and Europe. It gathers in one volume the essential information on the ecology of the breeding birds of Switzerland published since the turn of our century.

The first section of the volume stresses the position of the bird as a natural unit in its biotope. The diverse habitats of Switzerland range from the lowlands to the alpine zone, all of which are described and illustrated. The text on the distribution and the biology of 200 species of breeding birds is a condensed summary of 11 years work by 55 contributors, some written in German, some in French. The various authors acknowledge the help of some 400 collaborators. Each species is vividly pictured according to its distribution, habitat selection, population density and dynamics, nutrition, reproduction, and migration. As a unique feature of this book, acute problems and suggestions for future research are summarized in separate paragraphs and deserve special attention. An abundance of references guides the reader to special literature.

Ornithologists from abroad who want to visit Switzerland will do well to acquire a copy of this unique and monumental record of its avifauna, whose thousands of facts form a solid foundation for further ecologically-oriented ornithological work in Switzerland. The work combines a well written text with beautiful illustrations, distribution maps, and photographs of birds in their natural habitats. From the viewpoints of both naturalists and bibliophiles the book is a treasure.—E. G. F. Sauer.

24. The Birds. Roger Tory Peterson and the editors of *Life*. 1963. Life Nature Library. Time, Inc., New York. 192pp., lavishly illustrated in color and black-and-white. \$3.95. Text by Peterson, picture essays by the editorial staff. This handsome volume should appeal to the general reader, and to most amateur birdwatchers. It is much less technical than the Gilliam book on sea-birds (see following review), for example, and yet does a solid job on the technical matters it does cover. As in the case of other compilations, specialists may find an occasional phrase to take mild exception to: for example, the picture essay on p. 90 implies that the Evening Grosbeaks which occur in winter in the eastern U. S. have wandered from the west. This was of course true of the original incursions in the late 19th century, but in recent years the source of these flights has been largely the substantial population which nests in northern New England and eastern Canada. The editors' well-merited compliments to the author (p. 4) are marred a bit by misquoting the title of his most famous book.

Chapter 1, From Archaeopteryx to Sparrow, summarizes fossil birds and the orders of living birds. The next chapter discusses bird flight; then comes one on how birds feed and what they eat. Chapter 4 reviews life zones and more recent concepts, and makes some courageous estimates on numbers of birds. A chapter on "The Riddle of Migration" includes the theories of Kramer and Sauer, and something on banding. Next come discussions of communication among birds, and of breeding, concluding with one on the various relationships of birds and man. The latter includes some forthright comments on the menace of improper use of pesticides, which should help materially in making the general reader more fully aware of this hazard.—E. Alexander Bergstrom.

25. Sea-Birds. Instructions to Young Ornithologists, IV. Mary E. Gillham. 1963. The Brompton Library, The Museum Press, Ltd., London. 144pp. 15s. This introduction to the subject will be helpful not only to young ornithologists but also to most amateurs of any age. Indeed, most ornithologists who are not specialists on seabirds will find some of the examples novel. Dr. Gillham has drawn on her own wide field experience with these birds, as well as on the literature; while many examples are British, she draws others from around the world, particularly the southern hemisphere. Her line drawings and photographs illustrate the book.

She includes chapters on classification, flight, moving underwater, catching fish, other types of feeding, sea-birds on land, breeding colonies, and the breeding cycle.—E. Alexander Bergstrom.

26. Life Histories of North American Shore Birds. Parts One and Two. Arthur Cleveland Bent. Dover Publications, Inc. New York. 420pp; 412 pp. \$2.35 each. These are paper bound reprints, "unaltered and unabridged", editions of Bulletins 142 published in 1925 and 146 published in 1929 of the Smithsonian Institution United States National Museum. The text is copied word for word but the reproduction of the photographs is decidedly disappointing. Readers should take into account that these volumes were prepared over 35 years ago and, although they contain much delightful and valuable material, they must be used with caution.—M. M. Nice.

NOTES AND NEWS

At the August, 1963 meeting of the American Ornithologists' Union, Oliver L. Austin, Jr., longtime review editor of *Bird-Banding*, was elected second vice-president.

We have an inquiry for *Bulletin of the Northeastern Bird-Banding Association*, 1, 1 and 4; 2, 4; 4, 2; and *Oologist*, 57, 1-12 (1940) and 58, 1-3 (1941); to complete both sets. Any reader who knows of these issues for sale is asked to write to Robert A. McCabe, Dept. of Wildlife Management, University of Wisconsin, Madison, Wisc.—53706.

Many back issues of *Bird-Banding*, and indices through 1950, may be obtained from NEBBA's Treasurer, Mrs. J. R. Downs, So. Londonderry, Vt., who will be glad to send a list of those available, upon request.