of Zoology and Entomology, Pennsylvania State University, University Park, Pennsylvania.
Ed. note: This sort of cage seems to be reinvented periodically; I have seen at least one similar cage before (Mrs. Bertram Wellman had one at a NEBBA meeting some ten years ago). However, it is well worth calling to the attention of other banders.

RECENT LITERATURE

MIGRATION

1. **Northward fall migration on the Atlantic coast and its relation to offshore drift.** James Baird and Ian C. T. Nisbet. 1960. *Auk,* **77**: 119-149. Recurrently in autumn, in coastal areas from Maine to Virginia, numbers of passerines travel to the north of west—more or less counter to the southward seasonal trend of migration. Baird and Nisbet believe that the birds have drifted seaward during the night from inland avenues of flight and are returning to their preferred routes. They suggest that the "north or northwest" movements are redirected migration, a "simple—perhaps automatic—reaction to lateral displacement." Their hypothesis seems to be that recovery flights in these directions are a more or less fixed evolutionary adaptation to combat the effects of continuing northwest winds, widely thought to be the commonest cause of fatal drift out over the western Atlantic in fall. The implication is that the birds involved are reacting primarily to displacement itself, not to the wind directions that cause displacement though the latter may somewhat modify the result. In other words, behaving according to a now inherent pattern, they tend to fly north or northwest, whether or not a wind change has meanwhile destroyed the drift-combating advantages of such back-tracking.

The idea is stimulating, but the present supporting evidence is admittedly meager and so far can be accounted for in other ways (see next review).—R. J. Newman.

2. **Northeastern Maritime Region—report on the 1959 fall migration season.** Aaron M. Bagg. 1960. *Audubon Field Notes,* **14**(1): 10-17. The regional reports in *Audubon Field Notes* do not ordinarily lend themselves to review. Conventionally they are in themselves synopses, compressing so many diverse data into so small a compass that no dominant theme emerges. The account under consideration is unconventional. Not only is it the longest regional report ever published in the magazine but more than half its contents focuses on a single topic—the very one considered in the paper by Baird and Nisbet just discussed.

Bagg too regards many of the fall flights in New England in directions other than southerly as measures to counter dangerous drift; but he maintains that "migratory behavior reflects a response to the combination of local topography and wind direction" and that the observed movements of migrants in coastal regions result from a conflict of two tendencies—"to move in their standard directions" and "to fly into the wind, toward the west, northwest, or north, when the winds are from those directions." Whereas Baird and Nisbet pay most heed to the birds seen passing northward or northwestward and lay emphasis on the element of similarity in the flight directions, Bagg stresses their element of variability. He cites many examples of coastal-area migration toward the south and southwest.

The gist of the difference between the two interpretations is that Bagg looks upon most of the "wrong-way" movement not as a directionally stereotyped reaction to displacement *per se* but simply as a tendency to fly *into* dangerous wind, thus a tendency that varies in direction to the extent that the direction of such wind itself varies. Which view is more nearly correct obviously hinges upon whether fall migrants proceed northward or northwestward on a broad front when the wind is not from those directions. They do, say Baird and Nisbet, but the crucial corroborative evidence is the most sketchily presented part of their paper. The definitely cited instances could all be dismissed as purely local reactions to the relations of land and sea. For instance, the alleged "northwest" departure of birds from the island of Nantucket during periods of calm is mapped more nearly as a west-northwest movement out over the isles of Tuckernuck and

Muskeget toward the island of Chappaquidick, Martha's Vineyard, and the mainland—a route along which the birds would have land continuously in sight.

Baird, Nisbet, and Bagg all admit the present evidence is inconclusive. They express the hope that the questions raised will stimulate New England bird observers to watch more closely what migrants are doing.—R. J. Newman.

3. Nocturnal migratory orientation of European birds in Southwest Africa. Nachtliche Zugorientierung europaischer Vögel in Sudwestafrika. (With English summary.) Franz and Eleonore Sauer. 1959. *Die Vogelwarte,* **20**(1): 4-31. The phenomenon debated in the two preceding papers involves, in one way or another, the displacement of migrants. It poses an additional problem. Why are the birds displaced at all if they are able to sense displacement and later to combat it by recovery flights? A few years ago a reply would have been easy; they orient by the sun, adhere to the predetermined heading after dark, are pushed off track during the night by winds abeam, and readjust next morning when they again see the sun. Since then, simulated longitudinal displacements of young, inexperienced Old World warblers in a planetarium, carried out by Franz Sauer and his wife, have cast serious doubt on such an explanation. Shown the star maps of locations hundreds of miles to either side of their actual location, the birds reoriented but did so in different ways. With artificial shifts to the east, they tended to head back toward their summer range in Germany; with artificial shifts to the west, they turned more directly toward their main wintering grounds in Africa.

Now the Sauers have actually transported 12 Old World warblers of 4 species southward from Germany to latitudes in Southwest Africa between 21° and 22° S, just before the start of fall migration. There they tested the reactions of these warblers in round cages under the open night sky. In many respects the birds behaved much like the caged subjects in similar experiments in Germany. They deviated toward the moon and toward the cloudless breaks in partially cloudy skies; under solid overcasts they became random in their choice of direction; and, when the stars were in view and there were no distractions, they assumed their usual autumnal standard directions. But, in conformity with the Sauer hypothesis, their migratory restlessness was short-lived. They acted as though they saw from the stars that, without any effort of their own, they had already somehow miraculously reached the tropical winter quarters that are their traditional goal.

The true spring converse of this experiment would require the capture of migrants in their African wintering range and their swift removal to the European breeding range. For the time being the Sauers had to be content with observing what caged birds that breed in Europe do in Africa in spring. As is predictable from any point of view, the birds oriented northward. The chief novelty of this reverse test is that it included a species of shrike, *Lanius minor.*—R. J. Newman.

4. Two types of orientation in migrating Starlings, *Sturnus vulgaris* L., and Chaffinches, *Fringilla coelebs* L., as revealed by displacement experiments. A. C. Perdeck. 1958. *Ardea,* **46**(1/2): 1-37. The work of the Sauers, so far conducted mainly with Sylviids, is encouraging a widespread impression that many if not most nocturnal migrants, adult and immature, inherit a complete system of navigation. The more inclusive as to species this inference becomes, the closer it conflicts with the results of a classic series of displacement experiments that began with Rowan in Canada and have culminated in the work of the Dutch ornithologist Perdeck, whose conclusions in incomplete form have already been reviewed *(Bird-Banding,* **29**(1): 48).

The simple but laborious method of Rowan and Perdeck closely simulates experimentally the circumstances of lateral drift as it seems to occur in natural migration. Migrants are captured in numbers, banded, and released well to the side of their probable normal line of flight. The novelty of Perdeck's achievement lies in the vast number of birds employed (18,717 Starlings alone), which permitted carefully planned and executed releases of four types: (1) displaced adults; (2) displaced juveniles; (3) adults and juveniles displaced in mixed groups; (4) nondisplaced juvenile controls. The 354 recoveries of displaced birds showed clearly that individuals which had wintered at least once previously (adults) reoriented and arrived in their regular winter quarters, while those with no previous direct experience of the proper goal (juveniles) followed a course roughly parallel to that of the nondisplaced controls and ended up in wintering areas abnormal for their population. The first-year birds released in the company of adults did not perform significantly better than those released alone. Though Perdeck leans toward the conclusion that his displaced juveniles relied upon simple one-directional navigation, he frankly admits that the outcome might have been similar if the young birds had simply joined the flocks of migrant Starlings of another population passing through the area of release.

In spring, even Starlings displaced as fall juveniles possess the basic postulated requirement for a return to ancestral breeding grounds: they have been there. True to this expectation, all the April-August recoveries of such birds except one came from the normal summer range; but within this area they showed a heavier incidence to the east than the nondisplaced controls. Consequently Perdeck does not consider the results wholly conclusive. In their second autumn migration, birds displaced in their first autumn tended to use their goal-orienting ability to return to their original abnormal winter home. Such deliberate reenactments of displacement are perhaps the basis of echo invasions and the reappearance in successive years of rare stragglers at the same locality of record.

Similar experiments with 1256 displaced Chaffinches yielded only three recoveries—two juveniles in a displaced wintering area, one adult in the normal wintering area.—R. J. Newman and Stuart L. Warter.

5. Effect of acceleration on cerebellar potentials in birds and its relation to sense of direction. T. Gualtierotti, B. Schreiber, D. Mainardi, and D. Passerini. 1959. *American Journal of Physiology*, **197**(2): 469-474. Unnoticed by American reviewers, a series of papers in Italian dating back to 1955 have been reporting the interesting reactions of various kinds of pigeons after treatment in a specially designed centrifuge, the speed and plane of rotation of which can be changed at will. Now the experimenters concerned present a summary of their results in English.

The apparatus subjected the pigeons to measured acceleration in three coordinates of space—centripetal acceleration, tangential acceleration, and that produced by tilting or gravity. Electrodes implanted in the skull picked up the cerebellar responses of the birds. The recordings for the subjects while in the centrifuge varied little. But upon removal all the wild migratory doves *(Streptopelia turtur)* and nearly all the domestic pigeons of homing strains produced cerebellar afterdischarges. These were lacking in 100 percent of the nonmigratory doves *(Streptopelia risoria)* and in 93% of the domestic pigeons not known to have been derived from homing stock. Approximately half the hybrids between homing and nonhoming varieties of pigeons did show afterdischarges.

The four authors are adversely critical of the astronavigational hypothesis of Matthews, which seems to them to require an impossibly precise awareness of time on the part of birds, but they do not allude to the similarly demanding ideas of Sauer. They are equally inclined to reject the Ising theory, based largely on the perception of Coriolis force, for they have found that the threshold for afterdischarges is "1000 times higher than changes in possible geodetic forces involved in orientation." Yet they point out that "such a startling difference between cerebellar responses in animals which can direct themselves in space and animals which cannot, seems to suggest that a special arrangement in the labyrinth-cerebellar system might at least be one of the factors for bird migration." Their evidence should at least give pause to those inclined to regard the navigation process as purely visual in its sensory basis.—R. J. Newman.

6. Correlations between the homing behavior of pigeons and meteorological and geophysical factors. Über Zusammenhänge des Heimkehrverhaltens von Brieftauben mit meteorologischen und geophysikalischen Faktoren. (With English summary.) Hans G. Wallraff. 1960. *Zeitschrift für Tierpsychologie*, **17**(1): 82-113. This paper completes a trilogy dealing with a recent series of tests designed to explore the variability of the homing performances of racing pigeons (see previous reviews, *Bird-Banding*, **31**(2): 93). The minor factors evaluated include the following: light and moderate wind, which exerts a small and purely mechanical influence on initial headings and homing performance; cloudiness, which acts only by covering the sun and hampering solar orientation; and visibility, which shows a loose connection with homing performance but is decisive only when very poor. The annual cycles of homing performance and air temperature prove to be roughly parallel, but their short-term fluctuations are correlated only in winter and even then cannot be explained by direct physiological influence of temperature on the organism. No correlations with solar activity and geomagnetic disturbances are as yet evident.

Most novel of all is the discovery that homing performances tend to be poorer when barometric pressure in the upper and middle troposphere is falling interdiurnally than when it is rising, though the correlation with barometric pressure at ground level is not significant. This does not necessarily mean that pressure aloft affects homing directly but rather that both show evidence of being linked to a third and unknown variable. The idea recalls American experiments in which potatoes sealed under constant conditions have forecast by the height of the afternoon peak of their metabolic rate what the change in barometric pressure outside would be two days later. The eminent biologist, F. A. Brown, Jr., recently speculated on the basis of such phenomena that there may be some "subtle and pervasive *spatial* organization of the environment which is contributing . . . towards accounting for . . . periodic migrations of organisms." Already Wallraff may have taken the first step in the proof of this proposition. —R. J. Newman.

7. Radar and bird migration. William H. Drury, Jr. 1958. *Bulletin of the Massachusetts Audubon Society*, **43**(1): 23-24. This popular summary of the work of Sutter in Switzerland reflects the enthusiasm of the author for a line of investigation of which he was later to become the leading American practitioner. His emphasis here is on the lack of correspondence between the number of birds passing overhead in the night and the number observable in the field on the following day. He makes intriguing allusion to two nightly peaks, before midnight and before dawn, recorded by New England moon-watchers counting passing migrants but repudiated by radar. Such bimodal patterns characterize the activity of certain caged fringillids of doubtful status as typical night migrants; but, in tens of thousands of hours of critically analyzed lunar observations from all over the nation, they have only rarely been manifest.—R. J. Newman.

8. Radar and bird migration—a second glance. William H. Drury, Jr. 1960. *Bulletin of the Massachusetts Audubon Society*, **44**(4): 173-178. Since the publication of his earlier paper on the same subject, the author, in association with Dr. Robert Richardson, has become the principal investigator for what is probably the most ambitious and expensive study of migration by radar ever attempted. The method employed is to expose one frame of 35-mm. motion picture film for each sweep of the radar beam. The results seem to support many long-held suppositions regarding migration: that the main movement of birds in spring takes place with rising temperature, clear skies, and southerly winds; that floods of migrants pour southward in fall when the temperature drops and winds are from the northwest; that great numbers of birds can pass over in the night without creating visible abundance in the woods and fields; that blocking factors can produce impressive ground concentrations of birds even when the migratory flow is mediocre; that the same set of conditions that sets off migration in fall can turn birds back in spring, and vice versa.

That part of work treated here was carried out by a radar installation on Cape Cod in conjunction with moon watches in various parts of New England. It therefore furnishes indications regarding the effect of coastlines on migration. Radar has revealed great masses of bird echoes moving at night directly across the coast, apparently uninfluenced by it. Drury feels that large numbers of these birds "are blown downwind"—a conclusion he erroneously believes is shared by the British radar investigator Lack. Yet the greater density of migration over Cambridge than over Cape Cod suggests to him that birds are not entirely oblivious to the coast and its dangers. In this connection Drury discusses the theory of Baird and Nisbet, reviewed above, which in its formative stages laid greater emphasis on the importance of inland routes as an adaptation to avoid drift than is apparent in its published exposition. He states that radar has not yet clearly shown whether birds blown out over the sea in the dark have a definite ability to reorient once the sun comes up.—R. J. Newman.

9. Can sylviids navigate by the stars? Können Grasmücken mit Hilfe des Sternenhimmels navigieren? Hans G. Wallraff. 1960. *Zeitschrift für Tierpsychologie*, **17**(2): 165-177. The answer this critique gives to the question posed by its title marks the end of three years of tacit unanimous acceptance of the astronavigational hypothesis of Sauer (cf. Review No. 3)—three years during which that hypothesis exerted a powerful but not always salutary influence on migration research in general. Wallraff does not *disprove* the idea that migratory birds find their goal by means of the stars alone, nor does he claim to; but, for the time being, he reduces the compulsion to believe it. He begins by compressing Sauer's most pertinent experimental results into a semidiagrammatic tabular form that affords a clearer view of their over-all pattern and facilitates comparisons. Several points stand out at once that were not so apparent in the original text. One is the extent to which the case for a complete system of stellar navigation rests on the planetarium performances of a single Lesser Whitethroat *(Sylvia curruca)*. Another is that the evidence does not conform as perfectly with the hypothesis as it at first seemed to do when presented in narrative sequence. In an appended commentary, Sauer explains the most striking inconsistency in the data as a publishing error.

We must turn momentarily from the contentions of the investigator and his critic to look at some of the difficulties. Inferring from planetarium studies how a migrating bird might react to a given natural condition is an inexact process. No one knows how well the artificial situation reproduces all the relevant features of the real one or just how much the migratory restlessness of the experimental subject resembles the behavior of a migrant on the wing. Even under the night sky outdoors, the directions adopted by a caged bird vacillate in a way unlikely in a freeflying migrant guided solely by the slowly moving but unvacillating stars. In the planetarium, other potential sources of aberration come into play: the restricted view of the heavens, the problems of parallax, the unrealistically stationary position of the stars, and the psychological upset of the bird itself. In consequence the directions in which a captive aligns always scatter considerably. Sauer illustrated the amount of time a bird spent in each direction in a given test by radiating lines of appropriate proportional length. For examples the reader may refer to the selected diagrams in *The Scientific American* (**199**(2): 42-47). He will find that never is more than 50 percent of the bird's alignment confined to any single 11-degree sector, that even in oriented situations the rating for the most-favored direction is sometimes less than 11 percent of the total, and that the second-ranking vector can deviate as much as 45 degrees from the main vector and yet differ in length by less than 15 percent.

The directional scatter of the caged bird can be reconciled easily enough with the assumption that it would fly straight if released to migrate. The problem is how to decode from the varying directions shown by the captive what its direction in free migratory flight would probably be. Wallraff submits the scatter patterns to vector analysis to obtain an "average" direction. As may be seen by comparing the vector diagrams in *The Scientific American* with their translation into single arrows on a map, Sauer used no set method. In one instance, where the most-favored direction is west, they average much closer to west than to south, and the due southward tendency less than 9 percent of the total, his mapped arrow nevertheless points almost straight south. The accompanying explanation that "the bird headed east at first, but shifted eventually to almost due south" is less than satisfactory, even if one disregards the total absence of *easterly* vectors in the basic diagram.

A series of planetarium experiments designed to trace the route a bird would travel in migration or after displacement compounds the inexactitudes of the inferred real directions. Suppose that the direction appears to be southward under a simulation of the actual skies at the location of the planetarium and that the next test reproduces the stars for a latitude and longitude farther to the southeast. If the bird now seems to deviate from its southeasterly trend, three possibilities arise: (1) the original inferred direction (SE) was erroneous, with the result that the second test position is off the preferred route and the bird must correct its heading; (2) the idea that the bird has truly shown preference for a new direction is false; (3) the natural route embodies systematic changes of direction that the bird reads from the map of the stars. In any event accurate choice of a test location on the preferred route depends on the cumulative accuracy of all the inferred real directions that went before plus foreknowledge of the distance over which the individual migrant in nature would adhere to a given standard direction.

Sauer's data led him to accept the third of the possibilities listed—the only one that absolutely requires pure astronavigation. Wallraff shows that, with different sets of assumptions, the same data can be made to point to straightline migration southeastward to the winter quarters or even to southward flight.

However viewed, Sauer's contribution to the study of migration has been enormous. He has proven beyond any doubt that some sylviids employ stars in their guidance system. The uncertainties are how widespread this practice is among night migrants in general and whether or not it can operate successfully in the wild without supplementary information from other sources. Wallraff seems to subscribe to the "map and compass" concept of bird navigation and to cast the stars in the latter role. According to this view as the reviewer interprets it, the birds in planetarium experiments know by evaluation of unidentified stimuli that they have never left home. But simulated eastward and westward displacement distorts their stellar compass in such a way that they point more or less westward or eastward under the illusion that they are heading south. Sauer has promised a complete rebuttal of Wallraff in two forthcoming papers, one of which will be published in the United States.—R. J. Newman.

10. Starlings flying at night. Philip Wayre. 1960. *British Birds*, **53**(1): 34-35. Flocks of Starlings *(Sturnus vulgaris)* circled a farmhouse from 6:30 to 11:30 p.m. on the foggy night of January 31, 1958. The observation furnishes evidence regarding an important question in studies of migration — the ability of birds to land after dark. Though trees silhouetted against the light were plainly visible to humans at a distance of 20 yards, the birds did not alight in them.—R. J. Newman.

11. Radar observations of blackbird flights. Myron G. H. Ligda. 1958. *Texas Journal of Science*, **10**(3): 255-265. Daily from July 20 to August 9, 1957, in the hour before sunrise, the Air Defense Command Radar at Texarkana, Texas, picked up a large circular echo that seemed to originate from the vicinity of the Black Bayou Wildlife Reservation, 36 miles away in Louisiana. Visible regardless of the weather, the echo persisted for 1 to 1½ hours, moved at a radial speed of about 15 mph, and grew broader and more diffuse as it did so. Toward dusk a weak echo of irregular shape converged upon the same spot and ultimately disappeared there. Ligda points out that every observable feature of these radar returns fits the hypothesis that they came from flocks of roosting blackbirds, probably *Agelaius phoeniceus*. The results resemble those of Harper in England (reviewed in *Bird-Banding*, **31**(1): 43-44) and have a similar indirect bearing on the study of migration.—R. J. Newman.

12. The Irruption of Tits in Autumn 1957. S. Cramp, A. Pettet and J. T. R. Sharrack. 1960. *British Birds*, **53**(2): 49-77; (3): 99-117; (4): 176-192. Another fine cooperative study made possible by an "almost overwhelming" response by observers to appeals in journals, newspapers, and three B. B. C. broadcasts. "In 1957, increases of Blue and Great Tits *(Parus caeruleus* and *major)*, and to a much lesser extent of Coal *(P. ater)*, were noted in the British Isles after the breeding-season and were followed by an influx of all three species on the east and south coasts of England in mid-September." In many areas numbers remained high during winter. A marked increase occurred in opening of milk bottles and paper tearing on a scale not known since 1949. "There is strong evidence that the irruption was due to the high numbers surviving the mild winter of 1956-57."—M. M. Nice.

13. Migration through Kalmar Sound 1958 and 1959. Report No. 27 from Ottenby Bird Station. (Fågelsträcket genom Kalmarsund 1958 och 1959.) Ragnar Edberg. 1960. *Vår Fågelvärld*, **19**: 19-30. (English summary.) A new observation post was established at Revsudden, a thin strip of land jutting out into the narrowest part of Kalmar Sound north of Ottenby. This is a preliminary report of the good results obtained there. The main part of the migration was in a north-south south-north direction in accordance with the leading lines of the land. Among the waterfowl the Eider *(Somateria mollissima)* was most common. The loons, of which all four species were observed, *Gavia arctica, immer, adamsii*, and *stellata*, presented the greatest problem of identification. It was discovered that *arctica* could be distinguished in flight from *stellata* by its notably shallower wing-beats. A table contains detailed data of the 159 species listed. —Louise de K. Lawrence.

NIDIFICATION AND REPRODUCTION

(See also numbers 18, 19, 20, 21, 22)

14. Ethology and Ecology of the House Martin. (Zur Ethologie und Oekologie der Mehlschwalbe, *Delichon u. urbica* (L.)) E. A. Lind. 1959. *Annales Zoologici Societatis Zoologicae Botanicae 'Vanamo,'* **21**(2): 1-123. (With 6 page summary in English.) A very fine study of the House Martin in Finland. "In the natural environment the nests are situated in cliff-faces with exposed surfaces free of moss and lichen. In South Finland there are no such cliffs." Protection from rain and dripping water is essential and this is often offered better by buildings than by cliffs. Collecting a pellet of mud takes 6-8 seconds, fixing it with a rapid shivering movement takes 30-60 seconds. Pairs using old nests complete building in 3.5 days; new nests need 10.4 days on an average. "The birds of the former group carry 0-700 mud pellets to the nest, the others 690-1495." Pairs using old nests averaged 4.5 eggs in a clutch, those building new nests 3.8 eggs. "Apparently the pairs which build a new nest become physically exhausted to such an extent that the clutch is smaller than average."

Pair formation is described. Both sexes incubate and brood, the female taking the larger share. "Small broods (3 young) are brooded effectively for 11 days and large ones (6-9 young) for 5 days." Young usually remain in the nest for 24-25 days. A few days earlier the young start to sing. (The author is mistaken in quoting me as saying that *Melospiza melodia* sings in the nest; young of this species leave the nest at 9-10 days; the earliest record of singing is at 13 days (Nice, 1943: 141).) In a nest with six young House Martins, fighting was first noted at the age of 17 days, in the less crowded conditions in a nest with three young, aggression was first seen at 22 days.—M. M. Nice.

15. The Life History of the Lesser Grey Shrike *(Lanius minor* Gm.) in Hungary. L. Horváth. 1959. *Acta Zoologica Academiae Scientiarum, Hungaricae,* **4**(3-4): 319-332. Twenty-six full days between 25 April and 28 June 1957 were spent in this study in which 26 nests were located. Both sexes bring nesting material, but only the female molds the nest. First sets averaged 6-7 eggs, replacement sets 4-5. Except in one case the size of eggs increased from day to day. Incubation, performed by the female, lasted 16 days; fledging 17 days. Freshly hatched young are fed on small grasshoppers. A day by day description is given of plumage development of the nestlings. One nest was destroyed by wind, another was emptied by a Tawny Owl *(Strix aluco)*, while 12 were "robbed clean" by village children and herding boys! Eleven different notes of the birds are described. Song was heard from only three of the 26 males; it was a "bizarre mixture" of calls and songs of other birds, and in one case"—very strikingly—the grunting of the young pig."—M. M. Nice.

16. The Biology of the Cape Sugarbird *Promerops cafer (L).* G. J. Broekhuysen. 1959. *Proceedings of the First Pan-African Ornithological Congress, Ostrich Sup.* No. 3: 180-221. A very interesting study. *Promerops* nests during the cold, rainy season. It is closely associated with the shrub *Protea*, usually nesting in it, building its nest largely of materials from it and obtaining much of its food from the nectar of its flowers. The female builds, incubates the two eggs, and broods the young; the male shares in feeding the young, bringing about one-fourth as many meals as his mate. The female covers the eggs from 37 to 93 percent of daylight hours, averaging 70 percent. In 11 cases incubation lasted 17 days, in 6 cases the nestling period lasted from 17 to 21 days. Post-nestling care extended for about 3 weeks. Pterylosis is described, as well as physical development of the young; weight increases from about 3.6 grams at hatching to 30 grams at 19 days. From 55 eggs in 28 clutches 18 young in 9½ clutches were fledged, 33 percent success.—M. M. Nice.

17. Observations at a nest of the Parrot Crossbill. (Iakttagelser vid ett bo av den större korsnäbben *(Loxia pytyopsittacus)*.) Viking Olsson. 1960. *Vår Fågelvärld,* **19:** 1-19. (English summary.) This nest study, which was conducted in part at almost arm's length from the nest about 30 feet up in a tree, provides many interesting and unusual observations. The author skillfully analyzes and discusses such subjects as the male's feeding the female, feeding of the young "via the female," and his motivation in performing direct feeding of the young as compared to that of the female. After the female had delivered all the food she had in her crop, she performed "token" or "false" feedings when the young begged. The matter of nest sanitation is well treated. Of special interest to bird-banders is the connection found between nest cleaning and the appearance of bands around the legs of the young. The bander is warned that his ignorance of the typical behavior of any species he intends to band and of the right time to band the young in the nest may cause the parents to destroy the banded nestling. Although the account concerns only one nest, this is a stimulating contribution to the study of bird behavior.—Louise de K. Lawrence.

BEHAVIOR

(See also numbers 14, 24, 25, 27, 29, 32.)

18. Breeding Behaviour of the Black-headed Weaverbird, *Textor cucullatus graueri* (Hartert), in the Belgian Congo. Nicholas E. Collias and Elsie C. Collias. 1959. *Proceedings of the First Pan-African Congress, Ostrich,* Sup. No. 3: 233-241. An intensive study for 7 months of 40 color-banded birds nesting in a eucalyptus tree. The males appear over a month before the females. They destroy the old nests and set up territories, each claiming a few twigs. Territories are defended by fighting and a special display and vocalization. Each male has to defend his nests from neighbors' thefts of material. If a male disappears his nests are taken over by a neighbor. A detailed description is given of the male's technique of nest building, illustrated by a sketch showing the characteristic hitch type of knot employed.

Upon the arrival of the females, the males hang beneath their nests and display with vigorously fluttering wings at the same time giving rapid series of chirping notes. After inspecting various nests the female starts to line one with fresh grassheads and feathers. Two eggs are laid and incubated by her. The young are fed insects by both parents, the female usually bringing the larger share, as the male may be busy helping with other broods or building new nests. Males may "have up to seven mates in one season and as many as five at a time." Fledging lasts 18 to 20 days. The chief enemies of the young are human beings, the protein-hungry natives. A fine study.—M. M. Nice.

19. Studies on the Social Behaviour of *Quelea q. quelea* (Linn.) in French West Africa. John Hurrell Crook. 1960. *Behaviour,* **16,** Part 1-2:1-55. This weaver is "an extremely gregarious bird living in dense flocks throughout the year"; it causes severe damage to cereal crops in the savannah country of Africa. It nests in immense colonies in thorny thickets. It is monogamous and its territory is limited to the nest and its close environs. When the male has half built his nest he starts giving an advertising display and is shortly joined by a female. Detailed analyses are given of male and female behaviour under various conditions. After pair formation the female becomes dominant at the nest. Both sexes incubate; both feed the young by regurgitation. At 12 days the young leave the nest; they cuddle together in the bushes and preen one another. From 15 days they start to wander and parental feeding becomes more or less indiscriminate. At 19 days the young "go feeding in massed parties on fallen seeds below the trees."

Numbers are controlled to some extent by officials of the French Quelea Control, who destroy the nests near the start of incubation by flame-throwing. This process wipes out the nests and the foliage but leaves the trees and twigs intact. This operation resulted "in complete breakdown of territories and pair bonds." The males became exceedingly aggressive and the females wandered about at random. An exceedingly interesting paper.—M. M. Nice.

20. A Possible Fundamental in the Behaviour of Young Nidifugous Birds. Peter M. Driver. 1960. *Nature*, **186** (4772) : 416. After intensive studies on just-hatched ducklings and other precocial chicks the author describes "one of the most significant behaviour patterns . . . which occurs immediately upon hatching" and which he calls "the brooding reflex." "It involves an active search by the duckling for a feeling of enclosure around the head or part of the head." (This strong urge to be hovered characterized the large variety of precocial chicks studied by the reviewer at the Delta Waterfowl Research Station.)

Dr. Driver points out that when imprinting experiments are made as is customary on incubator-hatched chicks, these "juveniles may be 'incomplete' with respect to an appetitive behaviour-consummatory act complex involving the parent bird, and normally hatched birds will be 'complete' in this respect. Such a difference in experimental material may well result in difference in response; an unknown variable may have been operative." This is an important point for consideration.—M. M. Nice.

21. Some Observations on the Diamond Dove. Derek Goodwin. 1960. *Avicultural Magazine,* **66**(3) : 97-105. An illuminating and delightful paper on *Geopelia cuneata,* smallest of Australian doves. Its displays are illustrated with telling sketches and its voice and behavior described and compared with other species of pigeons. Besides "driving" his mate away from possible rivals, the male may "(and the same is true of other pigeons), try to drive his mate from any place where he feels ill at ease or frightened but not sufficiently so to flee without her." "When attacking an enemy, or while driving his mate, the Diamond Dove has a habit of jumping suddenly at the other bird, then pausing for a moment with upright head and swollen neck." With ample and nourishing food provided, Mr. Goodwin's Diamond Doves bred successfully and repeatedly; the young were able to fly at 11 and 12 days of age and were fed by their parents until they were strong on the wing.—M. M. Nice.

ECOLOGY

22. Comparative Ecology of Pigeons in Inner London. Derek Goodwin. 1960. *British Birds,* **53**(5): 201-212. Very interesting paper on Woodpigeons *(Columba palumbus)* and Feral Pigeons *(C. livia)*, both of which breed abundantly in Inner London. Food areas and foods taken by the two species are compared in tables and text. During winter competition is keen for food distributed by people, Black-headed Gulls *(Larus ridibundus)*, Mallards *(Anas platyrhynchos)* and House Sparrows *(Passer domesticus)* consuming the major portion. Individual pigeons quickly learn to recognize individual people who single them out for special treatment. "This mutual recognition often appears to play a big rôle in the survival of crippled or hook-billed Ferals."

Most Woodpigeons nest on the branches of trees, while all Feral Pigeons nest in or on buildings. They are having a difficult time "with the increasing destruction of old buildings, the construction of new ones of modern design (or lack of design) and the ever-increasing tendency to wire over old-established nest-sites in churches and elsewhere;" many pairs simply cannot find nest-sites. And for the same reason they suffer from lack of suitable roosting sites.—M. M. Nice.

CONSERVATION

23. Songbird Breeding Populations in DDT-Sprayed Dutch Elm Disease Communities. L. Barrie Hunt. 1960. *Journal of Wildlife Management,* **24**(2) :139-146. Well planned and executed counts on 11 quadrats, averaging 26 acres, in residential districts in southeastern Wisconsin. Six quadrats in three communities had been subjected to three years of dormant applications of mist-blown DDT. The five plots in three unsprayed communities averaged 409 songbird breeding pairs per 100 acres. In the three sprayed communities the density of breeding was 31, 68, and 90 percent respectively lower than in the uncontaminated communities. "Robin populations in these sprayed communities were 69, 70 and 98 percent below that in the average unsprayed community." The larger the dosage of poison, the greater was the destruction of bird life. Many authorities believe that DDT actually injures the elms rather than protecting them. *Why do we allow this insane slaughter of our song birds?*—M. M. Nice.

PHYSIOLOGY AND PSYCHOLOGY

(See also number 29.)

24. Ability of a Jackdaw to Discriminate Different Speeds of Metronome Beats. (Unterscheidungsvermögen einer Dohle für verschieden schnelle Metronom-Schlagfolgen.) Jürgen Reinert. 1960. *Zeitschrift für Tierpsychologie,* ***17***(1): 114-124. (English summary.) A hand-raised *Coloeus monedula* was conditioned to discriminate between fast and slow beats of a metronome, the reward for pecking against a switch after the positive signal being a peanut. The Jackdaw "could at best discriminate 112 from 138 beats/min., and thus its discrimination ability for different frequencies of metronome beats is as good as that of a sheep and a chimpanzee which—according to literature—could distinguish 92 from 120 beats/min. and 108 from 138 beats/min. respectively."—M. M. Nice.

25. Investigations on the Coordinations between Head and Leg movements in the Domestic Fowl. (Untersuchungen zur Koordination der Kopf- und Beinbewegungen beim Haushuhn.) Harald Bangert. 1960. *Zeitschrift für Tierpsychologie,* ***17***(2): 143-164. (With English summary.) These coordinations were studied by analyzing successive single frames of motion pictures of walking chickens. "The head moves in either absolute or in relative coordination with the automatic leg rhythm." "The nodding of the head is released by the shifting of the retinal image." The responses of baby chicks were investigated, as well as those of chickens kept in the dark for their first two weeks; walking and head moving coordinations proved to be "completely innate."—M. M. Nice.

ZOOGEOGRAPHY

26. Finnish and Norwegian Black-headed Gulls in Denmark. (Finska och norska skrattmåsar *(Larus ridibundus)* i danska farvatten.) Greta Vestergren. 1960. *Vår Fågelvärld,* **19**: 35-43. (German summary.) This study is based only on the records of gulls banded on the breeding grounds and recovered during their first year. The Finnish gulls are divided in two groups, those banded in southern Finland and those from the colonies along the Gulf of Bothnia in the north. During migration the first group disperses widely, over half of them following the traditional south-western route to the British Isles, south to Morocco's Atlantic coast, the rest going eastwards along the Mediterranean coasts, the Sea of Marmora, sporadically as far as the Black Sea and the Gulf of Asov. From September to December they traverse the Danish Isles in numbers, some remaining to winter there, mostly in the eastern coastlands. The Bothnia gulls migrate to England and Scotland and down the Atlantic coasts of France, Portugal, and Spain. Comparatively few of these gulls are recovered in Denmark, since their main flight apparently drifts across the middle of Sweden dotted with inland waters, then down the west coasts of the European mainland. The majority of the gulls from the Norwegian northern breeding grounds migrate to the British Isles, some crossing the North Sea and few recovered in Denmark; while most of those from the southern regions of the Oslofjord cross into the western parts of Denmark, some to winter, others to continue farther southwards. —Louise de K. Lawrence.

SYSTEMATICS

(See also number 31.)

27. Some Notes on the Rufous Warbler. Bryan L. Sage. 1960. *British Birds,* **53**(6): 265-271. Observations on *Erythropygia (Agrobates) galactotes* in eastern Iraq. Sketches and descriptions are given of the striking aggressive and defensive postures assumed during territorial encounters. The author believes that the behavior of this species and the fact of its possession of a "stout and powerful bill" indicate that it should be placed among the Turdinae rather than the Sylviinae.—M. M. Nice.

FOOD

(See also number 22.)

28. An investigation of the food of the Long-eared Owl. (En undersökning av hornugglans *(Asio otus)* föda.) Allan Lundin. 1960. *Vår Fågelvärld,* **19:** 43-50. (English summary.) This study was carried out over a period of five nesting seasons. Among the 2,667 identified prey animals found in the owl pellets, small rodents showed an overwhelming predominance. Birds accounted only for 1.3 percent. Curiously, one of these was a young owl, apparently a Long-eared. As this owl nests in considerable numbers in the woodlots of the farming districts where it hunts over the open fields, it is obviously a significant factor in the control of the farmer's worst enemy, the prolific and destructive small rodents.—Louise de K. Lawrence.

SONG

(See also number 15.)

29. Acoustic Learning of Sound-Isolated Blackbirds and the Development of Learned Motives Without and With Testosterone. (Akustisches Lernen verschieden alter schallisolierter Amselm *(Turdus merula* L.) und die Entwicklung erlernter Motive ohne und mit künstlichem Einfluss von Testosteron.) Helga Thielke-Poltz and Gerhard Thielke. 1960. *Zeitschrift für Tierpsychologie,* **17**(2): 211-244. (With English summary.) "Blackbirds reared in acoustic isolation (Kaspar Hauser birds) are able to reproduce many details of the full song but cannot arrange them in the correct relationships with one another. Normal full song of wild birds is only possible when there has been opportunity for this to be learnt from other blackbirds." These Kaspar Hausers remembered what they had heard at 28-29 days of age and reproduced it from the 122nd day on. One male learned a "stanza" heard 50 times, another one heard 30 times, while a third imitated one heard only 12 times. "Following testosterone treatment the 'courtship' of young blackbirds (both males and females) changed from that characteristic of the female to that characteristic of the male." Song in the males "changed from subsong, through rehearsed song, to full song in a few days." One of the two females nearly reached full song.

An impressive study illustrated with a great many spectrograms of the motives offered the birds and of their imitations.—M. M. Nice.

30. Finches/Songs of Fringillidae of Eastern and Central North America. Recorded by Donald J. Borror and William W. H. Gunn. 1960. Federation of Ontario Naturalists (for U. S. orders, c/o Curtiss and Weir, 54 Priscilla Place, Trumbull, Conn.). 33 1/3 r.p.m., 12". $5.95 (U.S.) This record includes about 400 songs from 226 birds of 43 species, with up to 20 songs and 16 individuals of a single species. Like the Federation's warbler record (see *Bird-Banding,* **29:** 26), this wealth of material makes it plain how much individual or regional variations may depart from the song as usually described. As the new record equals the warbler record in low surface noise and fidelity of reproduction, it is incomparable for anyone with an interest in fringillid songs.

The handsome jacket describes the groups into which the species have been arranged for comparison, lists the species in the order in which they appear (with the number of songs and individuals), and provides an alphabetic index for quick reference. Enclosed with the record is a three-page mimeographed list of the localities and months in which each song was recorded, plus some supplementary notes (under Redpolls, for "Hairy" read "Hoary").

Compared to the recent Peterson record album (see *Bird-Banding,* **31:** 107-108), the new Finch record covers a limited part of the checklist, but in much more detail. To my ear, the general uniformity of loudness in the Peterson records is less pleasing than the natural variations in this record; the latter prepares the listener better for going afield. The new record lacks three Fringillids included by Peterson (Black-headed Grosbeak, Lazuli Bunting, and Oregon Junco—all essentially western species), but includes three missing from the Peterson album (Painted Bunting, Red Crossbill, and Snow Bunting), and gains by the exchange. Of all the fringillids described in Peterson's eastern field guide, the only others omitted by the new record are European Goldfinch (established in very small numbers in a small area on Long Island), and three species which are not only local, but whose full specific statuses are open to some doubt (Ipswich, Dusky Seaside, and Cape Sable Seaside Sparrows).—E. Alexander Bergstrom.

BOOKS AND MONOGRAPHS

31. Check-list of birds of the world. A continuation of the work of James L. Peters. Volume 9. Ernst Mayr and James C. Greenway, Jr., Editors. 1960. Museum of Comparative Zoology, Cambridge, Massachusetts, pp. i-xii, 1-506. It is indeed a pleasure to have in hand this concrete evidence that "Peters' Checklist," as all the late James Lee Peters's legion of friends have always called it, is at last to be completed and, though not in a sequence Peters would have approved, otherwise in as sound, careful, and conservative a manner as his successors to the task are capable. The various authors of this volume and the editors merit the thanks of the scientific world for their exacting and critical labors toward completing this fundamental ornithological tool.

The volume has been prepared by recognized authorities for each of the 13 passerine families it covers. Despite inevitable differences between the 11 authors concerned in evaluating and delimiting the various systematic categories, their family treatments are remarkably uniform and conservative. These should certainly stand with only minor emendations as long as those in the first 7 volumes have. The few changes in style, such as assigning binomial designations to every species and supplying a few vernacular English names, are useful additions of which I'm sure Peters himself would have approved. However, on page vii of the introduction, the editors anticipate "inevitable criticism" of these vernacular names, and I don't like to disappoint them.

The value of standardized vernacular names has been recognized ever since those for the North American birds were proposed in the first edition of the A.O.U. Check-list. These have proved more stable over the years as well as more usable than their scientific counterparts. Wherever such sets of vernacular names have been introduced they have met immediate acceptance and wide use, not only in English but in many other languages (including the Japanese), and among professional ornithologists as well as the laity. The increasing interest of the general public in birds, not only of their own but of foreign countries, makes such authoritative lists doubly welcome. Whether a few diehards like it or not, vernacular names are here to stay, and having them standardized in a work of this sort by the best ranking professional opinion is a real service.

My main criticism of this volume's vernacular names is that the compilers were too cautious and too perfunctory in their selections. They must have gone pretty far back in the literature to get that spelling of "Red-wiskered Bulbul" (p. 231), unless it happens to be an uncaught "typo," which is of course unthinkable. It is also amusing to note the influence of the binomial habit in their splitting the long-entrenched Skylark into two words, doubtless to conform with Bush Lark, Sand Lark, and others. This is one place where I am sure usage (shades of Percy Bysshe Shelley!) will not only continue to make Skylark preferable to Sky Lark, but will eventually force acceptance of one-word renditions of most others (cf. Webster's New International Dictionary and G.P.O. Manual of Style).

I wish the various authors had given as serious thought to vernacular names as they did to scientific terminology. Though some might consider this lese majesty, it should be fun for anyone having to work with the International Code of Nomenclature to be released for a change from the demands of strict temporal priority, down to page and line. What a relief to be guided instead only by common usage and common sense, not by who since 1758 first called a bird what! (Did you know that Peters used 1758 as the numerical key to all his combination locks, such as the one on his briefcase?)

I share the editors' and authors' reluctance to invent new vernacular names for little known birds that scarcely need them (though the number of such is rapidly declining), but by careful search and selection they could have added stature to many good names now in fairly common use. How about Mosque Swallow, Pechora Pipit, Bull-headed Shrike, and Japanese Waxwing for just a few of the many left out of this compendium, and why not add impetus to the vernacular acceptance of such generic names as Phainopepla, and Hypocolius? These are coming into common, or should I say "vulgar" use just as surely as we've accepted Vireo, Junco, and others without a qualm. I, for one, hope vernacular names will be given much more serious attention in the forthcoming volumes.

Finally I wish to put on record for the sake of the memory of my late mentor and close friend James Lee Peters my strong disapproval of the sequence of families adopted for the completion of his work. While Peters was one of the first to point out that no hard and fast linear sequence for the passerine families can be established in the present state of our knowledge, and while he left no written record of his preferences in the matter, all who knew him were well aware that he regarded the 9-primaried oscines as the most highly evolved passerines, and was violently opposed (as violently as gentle Peters could ever be) to the European system of putting the crows at the top of the list on the basis of their supposedly higher "intelligence." Nevertheless the European-favored sequence has been adopted for the remaining volumes, and justified by vote of a packed committee selected at an international meeting held in Europe, where practically every available delegate was a well-known adherent of the European school of thought. While this was doubtless good international politics, it is not exactly my idea of fair play. Lest my respected European friends think me prejudiced, have they any doubt as to what the vote would have been at a meeting held in this country with as few adherents of the European viewpoint present?

Fortunately this summary associating of Peters' name with something he disapproved is not likely to prevail. Despite the weighty imprint of the last volumes of what was "Peters' Checklist," I am certain that their passerine sequence will never be adopted by American born and trained ornithologists. Furthermore, I have a strong hunch that Peterson's field guides are going to be far more successful in encouraging European adoption of the sequence Peters himself preferred!—O. L. Austin, Jr.

32. Comparative Breeding Behavior of Four Species of North American Herons. Andrew J. Meyerriecks. 1960. *Publications of the Nuttall Ornithological Club*, No. 2, Cambridge, Mass. 158pp. $4.60. A very fine piece of work, the well-organized result of 3,000 hours of intensive study on the Green Heron *(Butorides virescens)*, besides supplementary observations on the Great Blue Heron *(Ardea herodias)*, the Reddish Egret *(Dichromanassa rufescens)*, and Snowy Egret *(Leucophoyx thula)*. Photographs and excellent line drawings illustrate the displays of the various herons.

The author concentrates on the behavior from arrival on the nesting grounds to laying of the first egg. Instead of assigning each display to a hostile, escape, or sexual "drive" or to a conflict of these "drives," he uses the term "tendency" in a "strictly descriptive" sense. Many displays, he finds, cannot be definitely assigned to one or another category.

Under "Some evolutionary trends in heron behavior" Dr. Meyerriecks discusses: sociality, giving a table of 13 species from the most solitary to the most social; polymorphism; sexual dimorphism and pair formation; coloration of soft parts; and size and activity (larger herons generally being less active than smaller ones). The very useful "Comparative behavior chart" lists for 10 North American herons the occurrence, absence, or unknown status of 61 activities from comfort movements and feeding techniques to breeding displays.

That Dr. Meyerriecks is well acquainted with the literature on herons and on ethology is clearly shown in the five pages of bibliography. This book is a must for all serious students of bird behavior.—M. M. Nice.

33. The Bird in the Hand. R. K. Cornwallis and A. E. Smith. 1960. British Trust for Ornithology, Field Guide Number Six. Oxford, England. 60pp. Price 4s. The subtitle describes this welcome little volume as a field guide for ringers (= banders) and bird observatory workers. It should be most useful in setting standards for bird observatories in Britain and in instructing beginners. It covers much of the ground covered by the Fish and Wildlife Service banding manual on this side of the Atlantic, particularly the revised version now under preparation by the Service with help from the North American Council of Bird-Banding Associations.

Its first section, on handling birds, sets high standards for the protection of the bird, in holding it, extracting it from traps or nets, and in keeping it temporarily while other birds are being handled. "Generally speaking, tired migrants or breeding adults should not be detained more than a few minutes, and about ten minutes should be the limit for even a fit bird in mid-winter when foraging time is short. Birds taken at dusk or at night, however, are better "roosted" in a box and released early in the morning. . ."

The section on identification and examination should be particularly helpful. I note with pleasure that the Scientific Advisory Committee of the B.T.O. advocates use of a wing measurement with the wing itself flattened but *without* straightening the primaries. This should produce results comparable with museum skins, since the latter have shrunk slightly. This approach has been advocated here by C. H. Blake (among others), compared to flattening the wing completely as is generally done with museum skins.

The section includes the following warning: "Moult, abrasion, individual variation . . . or loss of a feather may cause a measurement to be false or misleading. Always check an unexpected result by making the complementary measurement on the other side of the bird. In general, measurements should be treated with some caution and regarded as only one factor among others (such as plumage characters) in making a judgement." When a bander first gains some experience with measurements, he may tend to consider the measurement the one certain fact about the bird, overriding plumage characters for a different species or genus (or even family).

The authors take pains to point out that "in Europe the convention is to number the primaries 1-10 from the outermost to the innermost; in America the opposite is sometimes done." The latter approach makes the count simpler when the last (10th) primary is absent or minute; it should be used on all papers or notes intended for publication in *Bird-Banding.*

The guide concludes with data sheets for the sexing and ageing of several dozen species. Data from *The Handbook of British Birds* (Witherby, et al.) were found to be inexact in some cases, especially as to molt, and field use of this guide is expected to refine and extend the methods of distinction described here. The sheet for the Starling *(Sturnus vulgaris)* was based on Brina Kessel's paper in *Bird-Banding* (**22**: 16-23), January, 1951.—E. Alexander Bergstrom.

NOTES AND NEWS

We regret the unusual delay in publication of this and the two preceding issues. The reasons are largely temporary, so that the 1961 issues should be more nearly on time. We intend to set an earlier editorial deadline for each issue, to help achieve this.

We are anxious to obtain copies of three back issues which are entirely out of stock: January, 1944; July, 1946; and July, 1958. If any reader has a copy he can spare, Mrs. Downs would be grateful for it (as a gift, or, if preferred, for a payment of $1.00 per copy by the NEBBA). She receives many inquiries for back issues, especially from libraries, and makes an effort to maintain sizeable stocks.

Mrs. Downs also has for sale the ten-year index to *Bird-Banding* for the years 1941 through 1950. Prices: to present members or subscribers, $3.00 paperbound or $4.50 in hard covers; to others, $4.00 paperbound or $5.50 in hard covers. Copies are postpaid within the U.S. or Canada. We feel this volume will be a handy desk reference to ornithological literature of the decade, and thus should be very useful even to those who don't have the *Bird-Banding* volumes for those years, nor easy access to the volumes.

Starting with this issue, a note following each paper will indicate the date it was received (in case of any major revisions, the date shown will be that for the revised manuscript). Traditionally, *Bird-Banding* has not shown such dates, on the ground that their chief value in other ornithological journals has been for papers on systematics, to establish priority of names. However, in