RECENT LITERATURE

BANDING

(See also Number 16)

1. Expansion of the Revtangen Ornithological Station. (Utvidelse av Ornitologisk Stasjon, Revtangen.) Holger Holgersen. 1955. *Stavanger Museums Årbok* 1955, pp. 135-140. (English Summary.) Describes the Bird Observatory, 32 kms from Stavanger and easily reached by bus, founded in 1937 and administered by the Zoological Department of the Stavanger Museum. It has proved "a most excellent place for the trapping and ringing of birds, principally waders of many species, and for the study of migration, particularly of shore and sea birds but also of terrestrial species."

A new cottage for visitors was built there in 1955. "It has accommodations for up to 6 guests who pay a nominal charge for the use of rings, traps, kitchen utensils, electricity, etc. Visitors will have to prepare their own meals. Priority in bookings will be given to ornithologists who are prepared to take part in the ringing and observatory work and to help with such other duties as may be necessary in connection with the station. The best season for the study of migration is August-October. Other naturalists will be made welcome provided room is available."

Why don't we have something of this sort here in the United States?—O. L. Austin, Jr.

2. 25th Annual Ringmarking Report. (25 Års Ringmerkingsrapporter.) Holger Holgersen. 1955. *Stavanger Museums Årbok* 1955, pp. 141-152. (English Summary.) The 25,545 birds banded in 1955 under the Stravanger Museum's ringing scheme is the largest annual total in its 25-year history, and brings the grand total up to 150,972 birds of 184 species, from which some 4,600 recoveries have been received to date, 762 of them in 1955. This brief summary of accomplishments lists all the previously published reports of the Museum's banding, and the principal analytical studies based on its material. Since 1950 the detailed reports and lists of returns and recoveries have been published in the Museum's journal *Sterna*. Details for 1955 "with a selected list of recoveries will appear in one of the next issues of *Sterna*."—O. L. Austin, Jr.

3. The Activities of the Ottenby Bird Station in 1955. (Verksamheten vid Ottenby fågelstation 1955.) Wolf Jenning. 1956. *Vår Fågelvärld* **15**(3): 151-176. (English Summary.) "A total of 9,522 birds were ringed at Ottenby during the year, and 155 were recovered in Sweden or abroad: three *Tringa erythropus* from Italy, 19 *Tringa glareola* (mostly from N. Italy and the Camargue), a *Calidris canutus* from Norway (change of route!), etc. . . . A striking feature of the autumn migration was the almost total absence of small waders of the genus *Calidris*, especially *Calidris alpina*, which in the last eight years have been seen and trapped in such great numbers at the bird station . . . no corresponding reduction in the number of dunlins was noted in southern Norway." Ottenby's grand totals are now 89,592 birds of 160 species banded, from which 1,370 recoveries have been received. Raw data for the new recoveries are given.—O. L. Austin, Jr.

MIGRATION

(See also Numbers 6, 27)

4. The Nomadic Movements and Migrations of the European Common Heron, Ardea cinerea. L. W. Rydzewski. 1956. *Ardea*, **44**(1/3): 71-188. This detailed study is based on an analysis of 4187 selected recoveries obtained from the various European banding programs. Rydzewski divides the heron year into "the nomadic period, the migration, the winter quarters, the homeward migration, the return and resettlement." Some of his many interesting observations and conclusions: "1. The nomadic period begins as soon as the young can fly and lasts to mid September. Topographical obstacles influence the movements. Almost any direction may be attempted, but SW predominates. The areas

covered increase steadily from 150 km radius in June to 300 kms in September. The search for food and the tendency to reduce the density of birds in the vicinity of a heronry would appear sufficient causes to account for the nomadic movements. 2. The migratory period extends from mid September to mid winter. Only the Atlantic coastline is a barrier. The standard direction is SW. The migration proceeds on a broad front, without leading lines. The causal factor is an internal, inherited migratory urge independent of external factors. 3. The wintering area comprises the Iberian peninsula, central and southern France, Italy, the Mediterranean islands and southern Balkans, and northern Africa from Morocco to Libya. The author supposes that the winter quarters south of the Sahara are the original ones and the North African to be later or secondary ones. Many birds winter at home or in intermediate areas. 4. Homeward migration proceeds on a broad front from Africa through a changed route via Italy. Some birds do not return but remain either in their winter quarters or en route. 5. Return to the natal heronries is proved by many birds. The older birds are more attached to home than the juvenile. The resettlement of Herons in strange colonies is proved in several instances. The distances vary from 27 to 490 kms. 6. Among the continental populations the Swedish, Danish, and "coastal" ones are the greatest migrants; in the "inland" populations the migratory habit is weaker. The sedentary habit is most marked in British Herons. The Norwegian population takes an intermediate place. The migratory habit in European Herons seems to be a primary one while the sedentary habit is a later consequence of adaptation to climatic changes. Both habits, i.e., the migratory and the nomadic one, are equally ancient but their present status is different. The migratory one is in course of weakening and it is possible that in the distant future the Heron will be a sedentary species. The nomadic habit will be apparently maintained and will replace the long migration." A splendid paper indeed, well documented, well thought out, and thought provoking. Sufficient data should now be available in the Patuxent files for parallel studies on several North American species of herons.—O. L. Austin, Jr.

5. Return to Solothurn of an Alpine Swift shipped to Nairobi. (Rückkehr eines nach Nairobi verfrachten Alpenseglers nach Solothurn.) H. and M. Arn-Willi. 1955. *Der Ornithologische Beobachter* **52** (4): 129. On June 30, 1949, the authors shipped two pairs of Alpine Swifts *(Micropus alba)* to Nairobi in East Africa. One was found dead only 30 km. from the Nairobi Airport. On May 29, 1955, one of these birds was found on a nest in Solothurn only 3 m. from the nest from which it had been taken 6 years before. The original band was replaced to confirm the record. This bird had been banded as a nestling on July 14, 1946, and was thus 10 years old.—R. O. Bender.

NIDIFICATION AND REPRODUCTION

(See also Numbers 19, 34)

6. Essay on the Little Egret in France. (Essai sur l'Aigrette garzette *(Egretta g. garzetta)* en France.) Jose A. Valverde. 1955, 1956. *Alauda*, **23**(3): 145-171; (4): 254-279; **24**(1): 1-36. (English Summary.) In this fine study the author is concerned essentially with establishing the Little Egret's niche among the other Ardeidae in France. He gives special attention to choice of habitat, social behavior, food, hunting techniques, migration, wintering, and enemies. The study reviews previous work done on the species in France, is aptly arranged, and is illustrated with excellent pen drawings, maps, and diagrams.

The Little Egret is apparently not a native of France, but a fairly recent immigrant from Italy, having appeared during the last century with a general northward extension of range. The first French colony was discovered in 1930; since then 12 more have been found, 9 of which are occupied today, most of them along the Mediterranean Coast. The species shows surprising environmental adaptability and nests in conifers, low shrubs and undergrowth, but with a preference for riverside deciduous forests, and always together with other Ardeids. Its favorite associates are the Night Herons *(Nycticorax nycticorax)*, but the Gray *(Ardea cinerea)*, the Purple *(A. purpurea)*, and the Squacco *(Ardeola ralloides)* Herons are also among its nesting companions.

Egg laying takes place mainly during April. The average clutch is 4 to 5 eggs; the author attributes variations in clutch size in different colonies to variations in the food supply. Both parents incubate. The Egrets and the Squacco Herons take turns incubating, while the Night Herons both sit together on the nest. Two interesting things occurred during nest life: 1. The defense of territory shifted from the area around the nest to an area around each young bird; 2. The Night Herons, habitually nocturnal, became partly diurnal at this time, but returned to their night activity as their young gained independence.

The Little Egrets migrate southwestward in the fall and winter along the coasts of the Mediterranean and in North Africa. One banded bird was recovered at Timbuctu, another in the Canary Islands. They come back in spring via Italy, suggesting a lingering adherence to their migratory pattern before they colonized France.

The egrets fish at distances of 2-20 kilometers from the nesting place. A 2-km radius around the colony is left unexploited, apparently for the benefit of the newly fledged young in their initial foraging. Detailed and painstaking research revealed that the different species of herons do not compete with one another, but are each established in their own hunting and feeding niches. Important factors are: 1. The place of fishing, 2. the size of the prey taken, and 3. the manner of hunting. The Little Egrets fish walking along in water about 15 centimeters deep with little vegetation, and eat animals 1.2 to 14 cm long, eels up to 30 cm. They kill the frogs by beating them against the ground before swallowing them.

The color of herons' necks has significance as camouflage. It is white or nearly white in herons that hunt by walking and at night, but spotted or streaked neck markings prevail in those that stand still waiting for their prey to approach.

In France the Little Egret is not protected, and its worst enemy is man.—Louise de K. Lawrence.

7. Breeding Biology and Ethology of the Rock Thrush *(Monticola saxatilis).* (Zur Brutbiologie und Ethologie des Steinrötels *(Monticola saxatilis).*) Tibor Farkas. 1955. *Die Vogelwelt,* **76**(5): 164-180. Sixty percent of the Hungarian Rock Thrush biotopes are artificial. Grassy areas or vineyards are essential to its habitat, as are perches of three types: hunting, watching, and singing, which are not always distinct. Hunting perches can usually be recognized by: (1) the low over-the-ground flight to them and (2) conversational song from them. They may shift with changes in food supply. Singing perches are fewer, regularly used, and are approached in display or by high, straight flights.

Territories are of two kinds: breeding and hunting. These may be kilometers apart, and territories of other pairs may lie between. Pairing is for several years and adult males tend to keep the same breeding territory from year to year. Nest building is by the female and is completed after egg-laying has begun. Incubation (13 days) is by the female only, which is fed by the male. At first both parents feed the young, which leave the nest before they can fly (at 14-15 days) and take cover rather far from each other. As soon as they can fly, they form a covey, and are then fed chiefly by the male. Second broods are rare, although there is time for a second brood. Nuptual display, care and development of young, food, molt, movements, development of song, mating behavior in captive and wild birds, and memory are discussed. Band records will be discussed in the forthcoming issue of *Aquila.* A very interesting study.—Frances Hamerstrom.

8. Breeding of the Red-breasted Merganser on Schleimünde 1955. (Brüten des Mittelsägers auf Schleimünde 1955.) Alfred Pflugbeil. 1956. *Die Vogelwelt,* **77**(2): 44-47. Twenty-two clutches of *Mergus serrator* averaged 10.4 eggs; range 6-15 eggs. Average weight of 56 eggs was 76.07 grams with considerable variation in weight within clutches (65-82 grams). Occasionally there appeared to be a considerable delay between completion of laying and beginning of incubation. Juvenile mortality during the rearing period was low—0.7 percent of 140 hatched young—perhaps because of especially favorable weather. Of at least 262 eggs only 53 percent hatched; 1 to 4 unhatched eggs were commonly found in hatched nests.—Frances Hamerstrom.

9. The Starling as a Competitor for Nest Holes. (Der Star als Bruthölenkonkurrent.) Hans Löhrl. 1956. *Die Vogelwelt*, **77**(2): 47-50. In Favoriten Park, with its ancient oaks, Starlings *(Sturnus vulgaris)* tend to take over newly constructed holes of the Great Spotted Woodpecker *(Dryobates major)* and the Grey-headed Woodpecker *(Picus canus)*. At first the Starling is kept out by the hammering woodpecker within. Upon completion of the hole, the woodpecker absents himself frequently and the Starling starts to take over, chasing the woodpecker which tires quickly. Each time the woodpecker approaches the hole, the Starling occupies it and remains in possession. Löhrl knows of no case in which woodpeckers succeeded in keeping a hole which Starlings really wanted. Great Spotted Woodpeckers are often forced to occupy their old holes after these have been rejected by Starlings. The Starling's drive to occupy holes goes beyond necessity; they do not always use the usurped holes for breeding.

Nuthatch *(Sitta europaea)* competition is of a different sort. Nuthatches and Starlings may possess a hole simultaneously for weeks. Early in the season Starlings visit the hole during the early morning and evening. The rest of the day the Nuthatches are most active. The Starlings tear out nest material, then leave to feed. The Nuthatch female brings nest material and reduces the size of the hole with hard mud. Starlings return and try to tear away the mud. Their success depends upon suitable footholds and wetness of mud. The Nuthatch may become the ultimate possessor of the cavity, especially if the peak of the nest building urge coincides with a period of dry weather. The Starling's nest building urge reaches a peak later in spring than the Nuthatch's; if it persists in keeping the hole open until its nesting urge is strong, the Starling keeps the cavity. Young female Nuthatches breeding for the first time tend to give up the struggle more readily. Although there may be some bickering at the nest, the outcome is primarily settled by behavior patterns and external forces rather than battle.—Frances Hamerstrom.

10. Differences in Great Grey Shrike Behavior in two Biotopes in Lower Saxony. (Unterschiede im Verhalten des Raubwürgers in Zwei niedersächsischen Landschaftsformen.) Kurt Bäsecke. 1956. *Die Vogelwelt*, **77**(2): 50-54. This study is based on Bäsecke's observations on the Great Grey Shrike *(Lanius excubitor)* since 1919. Eight nests were found in the field zone on the outskirts of Braunschweig. These suburban shrikes tolerated the noise of radios and heavy traffic, nested high in pines, defended their territories against crows *(Corvus sp.)*, Magpies *(Pica pica)*, and Kestrels *(Falco tinnunculus)*. Unlike the moor-dwelling shrikes, they failed to signal alarm for terrestrial enemies (dogs and livestock), and were almost wholly insectivorous.

Shrikes of the moor nested low (23 at 1.8-5 meters, 3 at 6-8, and one at 11) in smaller pines. Renesting was common. Only 9 of 27 nests contained normal first clutches (4 with 6 eggs, 4 with 5, and one with 7). Prey items (mostly small birds) are listed.—Frances Hamerstrom.

11. Successful Rearing of a Corn Crake *(Crex crex)*. (Gelungener Aufsuchtversuch der Wiesenralle.) Johannes Stände. 1955. *Ornithologische Mitteilungen* **7**(7): 132-133. Four young Corn Crakes, two of them injured when their nest was uncovered by a mowing machine, were given to the author. In a charming account he describes how he succeeded in raising one of them to maturity. As the young weighed 9-10 g. when received he deduced that they were newly hatched. The one that matured weighed 24 g. after 14 days, 50 g. after 24, 75 g. after 4 weeks, and 110 g. after 45 days. At this point it was fully feathered. There are notes on food, voice, and running ability.—R. O. Bender.

12. On the Relationships between the Sequence of Laying, the Intervals between Layings, the Start of Incubation of the Clutch, the Sequency of Hatching, and the Intervals between Hatchings. (Über die Beziehungen zwischen Legefolge, Legeabstand, Brutbeginn im Gelege, Schlüpffolge und Schlüpfabstand.) Franz Groebbels and Friedrich Moebert. 1955. *Ornithologische Mitteilungen* **7**(7): 128-133. The authors examined the theory stated by Peitzmeier that the last egg laid hatches first for those birds which start incuba-

tion with the laying of the last egg, since this egg does not undergo any interruptions in incubation as do those laid earlier. They recorded data for a number of species obtained from the literature and from their own records which show that this is sometimes true and sometimes false, even for the same species. Thus, with the Moor Hen *(Gallinula chloropus)* incubation was reported to begin with the first egg and also to begin later. In one case all eggs hatched within 24 hours; in another, within 12 days. Data are also presented for Loons, Ducks, Doves, Hawks, and Owls.

A method of estimating the relative length of time which individual eggs of a clutch had been incubated is described. This method involves weighing the egg, extracting the contents, filling with water, and weighing again. The water-filled weight plus 2.8 percent of this weight which the authors refer to as the "reconstructed fresh weight" less the original weight of the incubated egg gives a weight loss which is related to the length of incubation.

The paper concludes with a short discussion of cannibalism among Hawks and Owls. Here again, evidence is presented to show that in some cases the smallest and weakest young are killed and eaten by their parents or their older and stronger nest mates and, in other cases, are only eaten after they have died through starvation because their begging actions were not strong enough to be recognized as such and, hence, they failed to secure food.

Although the data do not lend themselves to the presentation of even tentative conclusions, this interesing paper would have been improved by a summary.—R. O. Bender.

13. Results of an Attempt at Bird Colonization in a Frankish Oak-Hornbeam Wood. (Ergebnisse eines Vogelansiedlungsversuches in einem fränkischen Eichen-Hainbuchen-wald.) Herbert Bruns. 1955. *Ornithologische Mitteilungen* 7(12): 221-227. In Europe over the last few years biologists have given a great deal of attention to biological control of plant pests, including efforts to increase avian populations and to determine whether the increases reduce the depredations of injurious insects. By hanging nest boxes, Pfeifer and Ruppert had demonstrated an astonishing population increase of hole-nesting birds in the city forest of Frankfurt. In order to determine whether similar increases were possible in Bayern, to study means of reducing the cost and effort involved, and to attempt to measure the effect on insect life, the author undertook the study reported in this paper.

The study area was a 2-hectare plot of mixed woodland, bordered by fields, known as the Meisterholz. In each hectare 62 nest boxes were hung in an orderly pattern, with a higher number of boxes in the outer rows bordering the fields. The boxes were of four types, systematically alternated so that information could be obtained on box preference, if any. The results are shown in the following table:

		Successful Broods									Unsuccessful Broods		
Year	Available Boxes	M	T	GS	Bmf	Kl	Sp	Wh	Total	%	M	T	Sp
1954	111	27	14	1	3	—	12	—	57	51	—	3	1
1955	109	31	17	—	1	2	38	2	93	86	1	5	2

M = Titmice, T = Pied Flycatcher, GS = Spotted Flycatcher, Bmf = Tree Creeper, Kl = Nuthatch, Sp = Tree Sparrow, Wh = Wryneck. The remaining nest boxes were occupied by small mammals, insects, or were empty. Some boxes were used for two broods.

The astonishing number of successful nestings found in 1954 of 28.5 pair per hectare increased still further in 1955 to 46.5 successful nestings per hectare. Although it was not possible to determine the number of free-nesting pairs, the author estimated them to be of the order of 25 to 30 per pair hectare for a total nesting population of about 70 pair per hectare.

The author comments on nest box preferences (species preference was found for Titmice and Flycatchers), relative density at the edge and interior of the study area (the percentage of occupied boxes was nearly the same), and on two methods of determining whether the nest boxes were occupied or not. He also studied the effect of this high density of birds on a colony of wood ants and concluded that it had no measureable effect. The effect of the high density

on harmful insects (the ants are considered beneficial) could not be clearly measured.

This is an excellent paper which should stimulate further research on population density. Although Bruns does not make the point, results such as these should give pause to those who assume that food supplies limit all small bird populatons, or that competition for food is a dominant factor in species competition.—R. O. Bender.

14. Breeding Biology of the Swift *(Micropus apus).* (Brutbiologisches von Mauersegler.) Herbert Timmerman. 1956. *Ornithologische Mitteilungen* **8**(5): 89-90. This report covers 6 years of observation of Swifts nesting in three nesting boxes on an old frame building near Rotenburg an der Fulda. Each year the next boxes were occupied by House Sparrows in March. About the middle of April Starlings dispossessed the Sparrows and threw out their nest material and eggs. Then at the end of April or the beginning of May, the Starlings were in turn displaced by the Swifts, which did not throw out the Starling nest material or eggs, but deposited their own eggs on top of whatever was there.

The most interesting data obtained by banding are shown in the following table:

	Nest Box 1		Nest Box 2		Nest Box 3	
1950	♂A	♀B	♂D	♀C	♂F	♀E
1951	♂A	♀B	♂D	♀C	♂F	♀E
1952	♂A	♀B	♂D	♀C	♂F	♀E
1953	♂A	♀G	♂D	♀C	♂F	♀E
1954	♂A	♀G	♂D	♀C	♂F	?
1955	No Swifts		♂D	♀C	♂F	♀B

Since the Swift reaches sexual maturity in the second calendar year, four of these birds were at least 6 year old. The consistent return of the males to their chosen nest boxes is noteworthy as is the relative constancy of the pairs. Female B must have nested at some other place in 1954 since she was definitely determined not to be the mate of ♂F in that year. Both birds of a pair usually slept together in the nest box at night.—R. O. Bender.

15. On the Nesting Habits of the Penduline Tit. (Über die Nistweise der Beutelmeise (Remiz pendulinus).) Richard Heyder. 1956. *Ornithologische Mitteilunger* **8**(8): 141-143. This species of Titmouse throughout its range nests either in trees or in reeds. Thus, when the species became common around the Neusiedler Sea in Austria, nesting in reeds, the question arose whether the earlier uncommon residents which were tree nesters had adapted to reed nesting or whether the increase was due to an influx of birds from the southeast where they commonly nest in reeds. The author believes the latter to be true. The author then discusses, from literature references, morphological differences associated with the differences in nesting habit.—R. O. Bender.

16. Little Ringed Plover Observations in Westfalen. (Flussregenpfeifer-Beobachtungen in Westfalen.) Horst Mest. 1956. *Ornithologische Mitteilungen,* **8**(9): 161-165. Reviews the distribution of the Little Ringed Plover *(Charadrius dubius curonicus)* in Westfalen over the last 20 years and discusses its breeding biology. Clay banks and islands are its preferred biotopes. Exceptions are noted to the rule that the male selects the nest site. Although the male does incubate part of the time, the sexes do not share incubation duties equally. The laying interval between eggs varies; four is the normal clutch and incubation usually begins after the third egg is laid; the eggs are pipped 3 to 4 days before hatching. The author describes the parents' distraction display when the young birds are approached. He banded many of the birds, and gives sundry measurements and weights.—R. O. Bender.

17. Long-tailed Tit Helps to Rear a Brood of Great Tits. (Schwanzmeise hilft bei der Aufzucht einer Kohlmeisenbrut.) Armin Possert. 1955. *Der Ornithologische Beobachter* **52**(3): 96. During an inspection of 50 nest boxes maintained by the Ornithological Union for Bird Protection of Frauenfel, the author found a Great Tit *(Parus major)* brood being fed by a male Great Tit and a Long-tailed Tit *(Aegithalos caudatus).* After careful observation over 3 days he

concluded that only these two were caring for the nestlings. The paper is illustrated with a picture of each bird feeding young at the nest box.—R. O. Bender.

18. Mixed broods of Great Tits, Blue Tits, and Nuthatches. (Mischbruten von Kohlmeisen, Blaumeisen und Kleiber.) Hans Arn. 1955. *Der Ornithologische Beobachter* **52**(4) : 129. In one case six young Great Tits (Parus *major)* and two young Blue Tits *(P. caeruleus)* were being fed by a Great Tit. In another, seven Blue Tits and one Great Tit were being fed by a pair of Blue Tits. In the third case, seven Nuthatches *(Sitta europaea)* and one Great Tit were being fed by a pair of Nuthatches. No preferences were evident on the part of the parents for their own young. In the first case, the nest could have been started by Blue Tits and pre-empted by Great Tits, probably after the death of the female Blue Tit. In the other two cases, it is probable that distress laying by a female Great Tit was involved. It would have been interesting to determine whether the "strangers" in these nests were reared successfully. —R. O. Bender.

BEHAVIOR

(See also Numbers 7, 9, 10, 16, 31, 33, 34)

19. Studies on Great Crested Grebes. K. E. L. Simmons. 1955. *Avicultural Magazine*, **61:** 3-15, 93-102, 131-146, 181-201, 235-253, 294-316. 5/—. 61 Chase Rd., Oakwood, London, N. 14. A fine, detailed study, carried on for 8 years, on the behavior of *Podiceps cristatus.* This species had been reduced in Great Britain through slaughter for women's hats to about 40 pairs in 1860. "Protective legislation, for once in time, saved the species so that by 1931, when a careful co-operative census was made, numbers had gone up over 3,000 percent." Since then there has been further increase, "helped by a host of new, artificial lakes in the flooded gravel pits"; moreover, such sites "are at first free of the bird's worst foe, predacious pike," *(Esox lucius).* General habits, threat, fighting, territory, courtship, and parental behavior are described and their significance discussed. Robert Gillmore's sketches are a helpful feature of this interesting pamphlet.

Papers on other species of grebes are briefly mentioned, but unfortunately the author missed some good articles on nesting behavior, such as Gross, 1949, *Auk,* on *Podiceps dominicus;* Van Ijzendoorn, 1944, *Limosa,* on *P. caspicus;* Deusing, 1937, *Auk,* on *Podilymbus podiceps,* and others on American species. He well concludes: "What is needed initially in a comparative study of grebe behaviour is a really detailed objective inventory of the threat and courtship displays of as many species as possible in order to trace the evolution of such behaviour in the group as a whole. What a wonderfully exciting field of research is crying out to be explored!"—M. M. Nice.

20. The Feather Postures of Birds and the Problem of the Origin of Social Signals. Desmond Morris. 1956. *Behaviour* **9**(2-3) : 75-113. The primary function of body feathers is temperature control. There are four chief feather postures: sleeked, relaxed, fluffed, and ruffled. In "nonthwarting situations the mood of a bird may, under certain circumstances, be conveyed to its fellows by its unspecialized feather postures, which therefore act as simple signals." Most of the paper is devoted to feather signals in thwarting situations and the general problem of thwarting and the evolution of signals, the primary autonomic responses and secondary responses. The most important of these primary responses are: elimentary changes leading to defecation; circulatory changes leading into bare-skin-flushing displays; respiratory changes which have evolved into vocalizations and inflation displays; thermoregulatory changes leading to pilomotoric activity and feather erection displays.

Seven of the 12 illustrations show the strong attraction exerted by the fluffed or spheroid position of a Necklace Dove, *Streptopelia chinensis,* on the "clumping" response of the Java Sparrow, *Padda oryzivora.* This is a very important paper, investigating as it does, physiological bases for bird behavior.—M.M. Nice.

21. The Following Response of Young Coots and Moorhens. R. A. Hinde, W. H. Thorpe and M. A. Vince. 1956. *Behaviour*, **9**(2-3): 214-242. In an attempt to test Lorenz's theories on imprinting, 39 chicks of *Fulica atra* and 79 of *Gallinula chloropus* were hatched in incubators and raised in small brooders in groups of from 2 to 18 birds. The experiments consisted in releasing single chicks in a 50-foot paddock where objects of widely differing size and shape were pulled on a wire. Sometimes the chick followed the object, sometimes it ran to the side of the pen, sometimes it merely wandered about. The authors concluded that the following response of these birds "is released by almost any moving object independently of any prior learning process." The experiments did not support Lorenz's characteristics of the "sensitive period" for imprinting nor its "irreversibility." The authors conclude that "There is no evidence that 'imprinting' is fundamentally different from other types of learning."

But were they investigating imprinting? Lorenz (1935) based his conclusions on ducks and geese; here the young *have* to follow their mother or die; their home is their mother and from the first she may lead them long distances. Coots and Moorhens, on the contrary, stay on territories; young Coots do not follow their parents closely, but wander about in the territory and swim to their parents to get food. Alley and Boyd (*Ibis*, 1950) found that the "newly-hatched Coot chick shows a tendency to follow large moving objects" for instance, a man, but by 24 hours "the imprinting [on the parents] is complete." Since the baby Coot may not leave the nest until a day old, this learning to restrict its filial responses to adult Coots would seem to depend largely on the warmth and food it receives from its parent as well as on acoustic signals; this was the case with the Coots we raised from the egg. Coots and rail chicks have a strong bond to one another. I suggest that when a bird in these experiments was carried alone to a strange place, "feet dangling," "struggling furiously," any moving, rattling thing offered might serve as some sort of a temporary substitute for a parent or brood companion. But I would not expect these rails to form a lasting bond to any of these objects.—M. M. Nice.

22. Concerning Some Behavior Patterns of the Green Woodpecker during the Breeding Season. (Über einige Verhaltensweisen des Grünspechtes in der Fortpflanzungszeit.) Dieter Blume. 1955. *Die Vogelwelt*, **76**(6): 193-210. Discusses head movements of the Green Woodpecker *(Picus viridis)* and their function in detail.—Frances Hamerstrom.

23. On the Uniting of Broods of *Mergus serrator* and *Mergus merganser*. (Om kullsammanslagning hos skrakar, *Mergus serrator* och *Mergus merganser*.) Göran Bergman. 1956. *Fauna och Flora* **1956** (3): 97-110. (From the English summary.) The author interprets in behaviorist terms the well-known merganser habit of combining broods of similar age under the protection of a single female: "When two females of the red-breasted merganser with their broods happen to meet, the adult birds react more or less aggressively, the weaker one often leaving its young for some minutes. If the aggressive or escape behavior is strongly activated, this behavior releases a marked increase in the uniting drive of the young. Their distress-calls are released and they huddle together, and if the young of the two groups are of the same age and the uniting drive is very strongly activated, the two broods join each other, too, then swimming away conducted by the stronger female."

Dominant behavior traits of this sort must be of considerable importance to a species' success, but the practitioners of the new behaviorism seem more interested in translating the simple observations of old-fashioned natural history into their peculiar jargon of stimulus-response associations, releasing mechanisms, displacement activity, imprinting, conditioning, activation, habituation, and the like than they are in determining the biological significance of the phenomena observed. Bergman does claim "The mortality of the great brood-flocks is not higher than that of the single broods. Very great flocks sometimes split up again by missing the female, and the young live quite well alone." But he offers no evidence in support of these important, and moot, points. Nor does he comment otherwise on the possible advantages or disadvantages to the mergansers of combining broods the way they do.—O. L. Austin, Jr.

CONSERVATION

(See also Numbers 6, 13, 19)

24. Bird Mortality in Elmhurst. A. E. Montgomery. 1956. *Illinois Audubon Bulletin*, No. 99: 1-3. Because one or two elm trees were found to be suffering from Dutch elm disease, the authorities in Elmhurst, Illinois, put on an intensive campaign of spraying all the city elms with DDT, beginning April 1. As a result the nesting birds were practically wiped out. "Great quantities of dead earthworms appeared . . . *Every robin was exterminated in the area sprayed.*" About half the Cardinals seem to have been killed; Downy Woodpeckers and Redheads, English Sparrows, Starlings, Blue Jays and Baltimore Orioles were also victims. Ruby-crowned Kinglets were killed in great numbers. Only Catbirds and Wood Thrushes, both late arrivals, escaped.

Ironically enough, it has been shown in recent articles in the *Journal of Economic Entomology* and elsewhere that spraying of trees with these poisons is not only fatal to a great variety of animal life, but actually makes the trees themselves more susceptible to disease. Even if we are indifferent to the fate of our fellow creatures, we may well consider what the accumulation of these deadly poisons in our soils, water and food is going to do to the human race.—M. M. Nice.

25. On the "Indirect" Distribution of the Oilpest in a Sea Bird Sanctuary. (Etwas über die "indirekte" Verbreitung der Ölpest in einem Seevogelschutz gebiet). Hans Rittinghaus. 1956. *Ornithologische Mitteilungen* **8**(3): 43-46. The author points out that killing birds at sea does not represent oil's only hazard to bird life. When washed ashore on islands where sea and shore birds nest, oil causes considerable additional mortality to adult and young birds.—R. O. Bender.

ZOOGEOGRAPHY

26 The Eider as a Visitor and Breeder along the German Coast. (Die Eiderente, *Somateria mollissima*, als Gast und Brutvogel an der deutschen Küste.) Herbert Ringleben. 1955. *Die Vogelwelt*, **76**(4): 125-134. Well documented extension southward of the breeding range and increase in numbers of the Eider. Bibliography of 50 titles.—Frances Hamerstrom.

27. Autumn Bird-life in Sardinia and Sicily. (Herbst-Vogelleben in Sardinien und Sizilien.) Joachim Steinbacher. 1956. *Die Vogelwelt*, **77**(1): 1-12. Numbers, species and behavior of birds in this region differ in fall and spring. In fall, residents are single, inconspicuous, and shy. Partial migrants, some of which were commonest in spring, are scarce in autumn, some of them having left before others arrived from the north. There does not appear to be a mass migration through this region, but rather a stream of about 100 small birds a day along the Sicilian coast in fall. An annotated list by species is given.—Frances Hamerstrom.

28. Population Density of the Black Woodpecker. (Siedlungsdichte des Schwarzspechtes *(Drycopus martius).*) Nikolaus Langelott. 1956. *Die Vogelwelt*, **77**(1): 18-21. The range of this shy species had shrunk by 1861 Brehm believed, because of cutting of nest trees. Langelott, however, attributes the early loss of range to intensive shooting (foresters formerly considered the Black Woodpecker a noxious species). After persecution ceased about 1900, the species lost its shyness, nested near civilization, and expanded its range northward. Newly populated areas are, in general, as thickly populated as areas in which the Black Woodpecker has long been established. An interesting case of a species altering its habits to adapt to civilization.—Frances Hamerstrom.

MORPHOLOGY AND ANATOMY

(See also Number 20)

29, An Analysis of the Weights of Birds Trapped on Skokholm. Browne, K. and E. 1956. *British Birds*, **49**(7): 241-257. More than 4,000

birds of 69 species were weighed during 1947-53 on Skokholm, a small island off the Pembrokshire coast. Minimum, maximum and average weights are given for each species. Migrants weigh less in spring than in fall. Nestling Meadow and Rock Pipits *(Anthus pratensis* and *spinoletta)* and Wheatears *(Oenanthe oenanthe)* may weigh as much as or even more than their parents; but a sharp fall ensues upon leaving the nest, followed by a "rise continuing into late autumn, interrupted by a further fall at the time of the moult." Among possible factors influencing the wide variations found in individuals and within species, differences in time of day and season, in sex and subspecies are suggested.—M. M. Nice.

FOOD

(See also Numbers 6, 10, 13)

30. Observations on the Gull-billed Tern during the Post-Breeding Season. (Beobachtungen an der Lachseeschwalbe *(Gelochelidon nilotica)* nach der Brutzeit.) Dietrich König. 1956. *Ornithologische Mitteilungen*, **8**(8): 143-147. This paper reports on the roosting and feeding habits of the Gull-billed Tern during the post-breeding season in Denmark. At this season (mid-June to mid-September) adults were estimated to number from 50 to 70 percent of the flock. The birds had a strong attachment for specific sleeping places, usually cow pastures. Several instances of the birds capturing field mice *(Microtus)* were noted, and one caught a grass frog.—R. O. Bender.

31. A Young Eagle Attacks a Fox. (Angriff eines Jungadlers auf einen Fuchs.) Sam Nebel. 1955. *Der Ornithologische Beobatchter*, **52**(2): 59-60. A short description of an attack by a young Golden Eagle *(Aquila chrysaëtos)* on a large mountain fox in Switzerland at an altitude of about 2,300 meters. The eagle made a number of passes at the fox but did not actually seize it. The author considered the action to be playful.—R. O. Bender.

32. Investigations on the Food of the Barn Owl through the year. (Untersuchungen über die Nahrung der Schleiereule, (Tyto alba) in Jahresverlauf). Hans Noll. 1955. *Der Ornithologische Beobachter* **52**(3): 82-91. Pellets from the roosting places in Konstanz of a pair of Barn Owls were collected every 14 days from October, 1949 to October, 1950. Each 14-day collection was separately examined. From May to October small rodents were the predominant prey; during the winter half-year, insect-eaters such as shrews and moles were predominant. Of a total of 1,605 prey animals found during the whole year, 49.8% were rodents (mostly mice); 49.3% were insect-eaters, and 0.9% were birds. These findings are in very close agreement with those Geyr von Schweppenburg obtained in 1906.—R. O. Bender.

33. Peregrine Caches Prey. (Wanderfalk versteckt Beute.) Theodor Mebs. 1956. *Die Vogelwelt*, **77**(1): 12-15. Mebs watched a peregrine *(Falco peregrinus)* tercel give his mate a pigeon which he apparently had just taken from a cache. At another eyrie Mebs found a freshly killed and plucked pigeon hidden in a cranny about 180 meters from the nest and two molted tercel feathers near this cache. In both cases the peregrine pairs were without young, so caching of food may have been abnormal behavior stimulated by overabundance of prey. The author discusses similar incidents in the literature relating to other raptors.—Frances Hamerstrom.

34. Some Debatable Questions Concerning Two Kite Species. (Über einige strittige Fragen aus dem Leben der beiden Milanarten.) Otto Schnurre. 1956. *Die Vogelwelt*, **77**(3): 65-74. Neither for the Black Kite *(Milvus migrans)* nor for the Kite *(Milvus milvus)* is it known beyond doubt whether or not the male ever assists in incubation. Schnurre points out that this may vary between individuals, and that pluckings at the nest would indicate that the male was bringing prey to the female rather than taking turns at incubation. Lists of food items from nests of both species are given. One female Black Kite was brought fish while incubating; as soon as the young hatched, the fish diet was promptly discontinued. This is a thoughtful analysis of problems encountered in food habits work with raptors which may kill their own prey, may take it from other species, or may eat carrion.—Frances Hamerstrom.

SONG

35. Acoustical Research on Crows. (Akustische Forschungen an Rabenvögeln.) J. Giban. 1956. *Ornithologische Mitteilungen* **8**(4): 71-73. This report from the National Agricultural Research Institute of France covers studies made to control the damage done by three species of crows, the Rook *(Corvus frugilegus)*, the Carrion Crow *(C. corone)* and the Jackdaw *(C. monedula)* in southern France. Conventional control methods such as poisoning were found ineffective. Most of the paper is concerned with investigations of the possibilities of acoustical control. Recordings of the calls of all three species were obtained and analyzed and their reactions to sounds of varying intensity and frequency were determined. It was found that all three species were sensitive to low frequencies between 1,000 and 2,000 and that the Carrion Crow was much more sensitive than the other two. It is suggested that this may be due to the fact that this species is more solitary than the others.

Efforts to disperse Crows from night roosts were quite successful with a broadcast of about 30 seconds duration. (The intensity and frequency were not noted.) Applications of the method in nesting colonies, although promising, were less successful. These studies will continue.

The technique employed should be of interest to those who are concerned with Starling roosts in our large cities, and with blackbird damage to sweet corn and other crops. This paper is a summary of the results to date. Detailed papers describing the work have been or will be published in other places.—R. O. Bender.

36. Studies on the Morning Beginning and Evening Ending of Bird Voices. (Untersuchung über den morgenlichen Beginn und die abendliche Beendigung der Stimmäusserung von vogelarten.) Franz Groebbels. 1956. *Ornithologische Mitteilungen*, **8**(4): 61-66. This paper reports the times when notes or calls by each of 43 species were first heard in the morning and last heard in the evening. The author measured light intensities with a light meter and recorded such weather data as temperature, humidity, wind, precipitation, and cloudiness, from which he determined the weather conditions as favorable or unfavorable. He notes possible sources of error: The notes recorded are, of course, only those uttered within the observer's hearing radius; light intensities measured in open places are much greater than the true light value in thick cover, which is very difficult to measure.

From his data Groebbels points out that bird voice is related to and probably influenced by the same internal changes in physiology and metabolism that influence such other cyclic activities as migration, but he does not believe that the data can be related at this time to gonadal changes. External conditions are also of great importance, particularly light intensity, although the effects of wind, temperature, and precipitation must also be considered. He notes that though a species begins to sing at a certain light intensity on a clear favorable day, it may not sing on a cloudy day at the same light intensity, but may remain silent until much higher intensities are reached. An interesting paper covering a careful study.—R. O. Bender.

BOOKS

37. The Bird Watcher's Reference Book. Michael Lister. 1956. Phoenix House, Ltd., London. 256 pp., 35 photographs, 23 text figures, 45s. This attractive compendium includes: (1) Introduction (2) Habitats, Vegetation and Birds (3) Types of British Vegetation (4) Weather (5) On Writing a Paper (6) Directory (650 periodicals, institutions, 70 bird observatories, and 60 ringing schemes) (7) Glossary and General Information ("some 700 ornithological and allied terms (behaviour, ecological, statistical, anatomical, morphological, taxonomic, genetic and general), with the equivalents of the words defined in German, Dutch and French") (8) a bibliography, and (9) several indices.

Its scope is worldwide, except that the discussions of vegetation relate primarily to Great Britain. Of particular value are the directory (an admirable brief guide to ornithological activities everywhere in the world) and glossary

(at a time when every subdivision of the science is luxuriating in its own jargon, to the confusion of general ornithologists, let alone the general public).

This is not directly a book about birds, but a compilation of background material for the student who has already acquired some experience in ornithology. It does not discuss how to watch birds, how to keep records, and what problems the amateur may expect to solve most readily, unlike two earlier handbooks (*The Art of Bird Watching*, E. M. Nicholson, New York, 1932, or *A Guide to Bird Watching*, Joseph J. Hickey, Oxford University Press, 1943) It does not attempt to summarize progress to date in various aspects of ornithology, with suggestions for further study (like *Recent Studies in Avian Biology*, ed. Albert Wolfson, University of Illinois Press, 1955). However, any serious student will find it useful, particularly for periodicals, institutions, and terminologies of other countries.

In any compilation on this scale, minor errors and inconsistencies are to be expected. For example, the list of ornithological institutions in the United States is limited to three, includes the Ecological Society of America, and omits both the Wilson Ornithological Society and the Cooper Ornithological Society (though both the latter are cited—inexactly—under their respective publications). Meanwhile the list of ornithological institutions in Great Britain runs to almost 3 pages, including many that are hardly ornithological (e.g., the Jourdain Society, "for the advancement of the science [sic] of oology"). The Northeastern Bird-Banding Association is listed as the publisher of its *Journal*, which became *Bird-Banding* in 1930.—E. Alexander Bergstrom.

NOTES AND NEWS

We are pleased to record the receipt of a 1956 Nash Conservation Award by Dr. Paul H. Fluck of Lambertville, N. J. (president of the Eastern Bird-Banding Association) "for his series of volunteer bird-banding lectures and demonstrations given at Washington Crossing Park" in Pennsylvania. Also, in the professional class, an award was made to Richard L. Weaver, now associate professor of conservation education at the University of Michigan. Many NEBBA members will recall Dick Weaver's years at Dartmouth and at the Greenwich Audubon Center, and his paper in *Bird-Banding* on the fabulous Purple Finch invasion of March, 1939.

Bird-Banding is greatly indebted to the Inland Bird-Banding Association for their gift of $100 toward the cost of publishing the pending 10-year index, for the years 1941 through 1950. No complete index of this sort pays for itself, and yet such an index is of tremendous help to anyone using a set of *Bird-Banding*, and as an index to most ornithological literature for those years. The index itself is ready for final typing as this issue goes to the printer, and we are optimistic about its early appearance.

Mr. Johnson's income statement, printed in this issue, brings the statement down to the end of the fiscal year of 10/31/56, and thus differs in some minor details from the statement presented at the 1956 annual meeting, since it was necessary at that time to estimate the last month of the fiscal year.

This encouraging statement enables us to print more pages of *Bird-Banding* in 1957 than in earlier years. We still need good papers and general notes, and can still arrange quite prompt publication. Once we pass beyond a basic print order which covers the cost of setting type, the printing cost of each additional copy is low, and thus each new subscription helps materially to increase the length of issues.

The total circulation of *Bird-Banding* reached 590 with the January, 1957 issue, compared with 443 for April, 1951, for example. Paid subscriptions or memberships were 525, compared with 390 in 1951 (the remainder includes both exchanges and copies supplied to reviewers). The mailing list includes 43 states, Alaska, 7 Canadian provinces, and 26 other countries.