Many of us who have spent time at sea have been impressed with the decisiveness with which seabirds take up a direction when they are flying over the sea. My experiences during World War II in trying to run an expanding search pattern indicated that remarkably accurate orientation should be credited to Gannets if they can run an expanding search pattern. For these reasons, some observations that I made on June 9, 1956 while traveling on the Royal Dutch ship *Groote Beer* bound for Southampton, England, seem to be worth publishing.

The weather was warm, wind west at about ten knots, sky overcast, and the sun could be seen as a spot through the clouds for two- to five-minute periods in each half hour. At 0800 local time the ship's position was about 80 nautical miles bearing 195° True from Fastnet Rock, on the southwest corner of Ireland. At 1115 the ship was about 70 nautical miles bearing 175° True from Fastnet. The ship's course was 093° True.

At 0800, 65 Gannets in groups of three to eight birds were seen flying, one behind the other, on a course which wavered slowly between 010° and 025° True. Between 0800 and 0930 I saw about 150 Gannets. At 0930 the Gannets' course was wavering between 005° and 010° True. A loose group of 11 Gannets, in single file, was seen at 1030, and these birds were flying due north. At 1115 20 Gannets, in single file, were seen flying along a course between 350° and 355° True. After 2:00 p.m., local time, the overcast was complete and 6 Gannets in three groups of 2 were flying erratically over the ocean.

My interpretation of these observations is that as the ship passed by Fastnet's gannetry, it crossed the paths being followed by Gannets returning home from their fishing grounds. When our position was plotted on the chart, and a direction taken to Fastnet, at each period the Gannets were headed directly toward the Rock.

It seems clear from these observations that the Gannets had a "picture" of the true homing direction, although it certainly is not clear whether these were actually homing in the sense that a displaced homing pigeon can return, or whether they had kept subconscious track of their wanderings and so were operating on "dead reckoning."

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Egg teeth and hatched shells of various bird species.—The deciduous calcareous denticle that erodes the egg shell in the process of hatching is remarkably uniform in most of the hundred bird species hatched and examined. It is characteristically situated on the upper mandible a few millimeters from the tip. Since the apex of the bill in most species is slightly decurved, and in hawks, owls and parrots greatly decurved, the egg tooth varies in its position relative to that point of reference. In all species examined, however, a line passing along the proximal part of the tomium transects the anterior base of the egg tooth regardless of the curvature of the culmen. In the ducks the egg tooth has a broad basal plate surmounted by a sharp spine, the cutting instrument; in most other species only the cone-like spine is to be found.

Peculiarities encountered in my examinations of species artificially incubated, spontaneously hatched, up to 1957, are as follows: No neonatal American Woodcock *(Philohela minor)* in my collection has an egg tooth. Whether the denticle is never present in this species, or whether it is unusually deciduous, is hard to say. As the woodcock is known to have sensory nerve endings in the bill, the absence of an egg tooth could be adaptively accommodating; but if so, the technique must be singular. The hatched shells did not attract our attention and were discarded; however, Dr. John Aldrich has called our attention to the fact that Mendall and Aldous (The ecology and management of the American woodcock, 1943) describe the emergence of the downy young from a longitudinal slit on one side of the egg.

The egg tooth of the Rock Dove *(Columba livia)* is of the sort typical of other birds. It is noteworthy that the strongly prognathous lower mandible, whatever may be its reason for prognathism, is undoubtedly held in check from further evolutionary exaggeration by the mechanics of hatching. If it were any more prognathous, the present egg tooth could not gain purchase to the shell.

The Mourning Dove *(Zenaidura macroura)*, unlike the Rock Dove, is not prognathous at hatching. It has a typical egg tooth. But on the gonys there is a peculiar structure that resembles an egg tooth. The point of the structure, however, is directed posteriorly, as, indeed, the whole structure is well posterior to the apex of the bill so that it is difficult to understand how it could function.

The neonatal Yellow-shafted Flicker *(Colaptes auratus)* has the most peculiar egg tooth, or teeth, encountered. The flicker is prognathous. The tips of both mandibles have an extensive, thick, gleaming white covering that appears as if they had been dipped in enamel. On the lower mandible this covers the limited prognathous part. On the upper mandible it extends laterally along the tomium to half the distance to the external nares, and on the culmen extends as a ridge or keel to a point above the nares. The anterior part of the keel falls off precipitously at the locus of the anterior edge of the typical avian egg tooth. The Heinroths (Die Vogel Mitteleuropas, 1931) on plate 5 of volume 4 figure the very similar device of *Picus viridis.* The necessity for this armor is puzzling. The Heinroths (Die Vogel Mitteleuropas, 1924-1933) mention that the woodpeckers are supposed to have an "extremely altricial" condition of development at hatching. One could postulate that the relatively undeveloped bill requires the extra rigidity that the enamel-like covering affords. A further possibility could be elaborated on the basis of the prognathous condition of newly-hatched woodpeckers. (See discussion under Rock Dove, above.) The buttressing of the required higher "keel" and projecting cutting edge of the egg tooth may have been necessary to keep pace with the evolutionary differential growth of the lower mandible. Evolutionary caenogenetic emergence of the egg tooth of the lower mandible may have been the final resolution of the problem created by prognathism. Correlation of this peculiarity with a long neck (possessed by woodpeckers) is not applicable to herons (which are not prognathous).

The Downy Woodpecker *(Dendrocopus pubescens)*, the only other woodpecker examined, also prognathous at hatching, lacks the extensive enameling and has no lower egg tooth but the upper "keel" of the flicker is replicated.

Two further considerations warrant examination. The egg shells of the flicker are relatively thin; this fact would seem to pose problems in the whereabouts of minerals in the egg drawn upon for the formation of the enormous egg tooth. Secondly, as any peculiarity of a neonatal bird, and especially of a cavity nesting species, is bound to be assigned to parental "feeding releasers" by behaviorists, this possibility would seem to be pertinent in the flicker.

While it was anticipated that a many-species comparison of hatched egg shells would yield data on differences in hatching technique (Skutch, *Condor,* **59**: 217-229, 1957), such data did not materialize from our examinations of the collected hatched shells of more than a hundred species—with the probable exception of the eggs of the woodcock mentioned above. Some eggs had seeming peculiarities in the raggedness of the fracture, but in most cases the singularity was not consistent within the species. The geese, ducks and hawks had extremely jagged fractures, but this was related to the thickness of the shell in these large birds. The herons had relatively smooth and regular fractures.

The typical fracture in most species was serrate for about three-quarters of the circumference of the egg where the hatchling brought to bear its egg tooth; the remainder of the circle was either smooth or irregularly jagged where the shell finally hinged open by gross pressure from the inside of the egg. In no case was the line of cutting spiral or eccentric. The shell in practically every case was cut nearest the end of least concavity, never at the point of greatest circumference, but sporadically at the end of greatest concavity. The eggs of the Virginia Rail *(Rallus limicola)* hatched relatively closer to the large end, lifting a very small disk and leaving much of the shell intact. The air-cell, contrary to most accounts, was not always pierced in either the small or the large species, whether hatched from the small end or the large end of the egg. The appearance of the fracture understandably led Porter (Friends in feathers, 1917) to believe erroneously that hatching of the Bobwhite *(Colinus virginianus)* is effected by external (parental) agency. The egg membranes of the hatched shell as they dry, contract, especially where cut by the egg tooth (Could "hatching enzymes" such as possessed by animals of other classes be involved?), pulling inward the loose fragments of shell and creating an apparent edge of external shear.—David Kenneth Wetherbee, Patuxent Research Refuge, U. S. Fish and Wildlife Service, Laurel, Maryland.

Some Leg Sizes and Band Sizes. Many data on leg sizes and band sizes have been tabulated by Blake *(Bird-Banding,* **25**: 11-16, **27**: 76-82, and **29**: 90-98) and Bergstrom *(Bird-Banding,* **25**: 58-59). The data in Table I represent information on species not covered by Blake and Bergstrom or species on which they had few data.

Table 1. Leg sizes and band sizes.

Species	Sample Size	Aver. Greater Diameter	Aver. Lesser Diameter	Band Size
Butorides virescens	1	7.7	3.6	6
Accipiter velox Im. ♂	16	3.3	2.3	2
Accipiter velox Im. ♀	12	4.1	3.1	3
Charadrius vociferus	16	2.8	2.0	1A
Actitis macularia	34	2.5	1.7	1B
Tringa solitaria	22	2.8	1.9	1A
Totanus melanoleucus	1	5.0	2.7	3A
Totanus flavipes	18	3.3	2.1	2
Erolia melanotos	1	2.5	1.8	1B
Erolia minutilla	29	1.7	1.3	0
Limnodromus griseus	1	3.2	2.2	2
Ereuntes pusillus	64	1.9	1.4	1
Empidonax flaviventris	8	1.5	0.9	0
Dolichonyx oryzivorus ♂	44	2.6	1.6	1A
Dolichonyx oryzivorus ♀	32	2.5	1.5	1A or 1B
Passerculus sandwichensis	17	1.8	1.1	0

The measurements were made with a "Blake" gauge and the recommended band sizes follow Table I in Blake *(op. cit.).* J. Woodford and Frank T. Lovesy. c/o Royal Ontario Museum, Toronto 5, Canada, and 220 Gowan Avenue, Toronto, Canada.

More Recoveries of Massachusetts Robins.—Some of the Robins *(Turdus migratorius)* banded at our station in Groton and recovered elsewhere have been described in earlier issues of *Bird-Banding* (**24**: 5-6, **28**: 99). In addition to four recovered within 50 miles of Groton, we have had seven more Southern reports, as follows:

Age Sex	Month Banded	Month Recovered	Place Recovered
A ♂	June, 1953	November, 1954	Claxton, Ga.
im.	July, 1952	March, 1954	Whittier, N. C.
♀	July, 1952	December, 1955	Ocean Springs, Miss. — "shot"
im.	Sept., 1955	February, 1956	Whiteville, N. C.
♀	Sept., 1954	January, 1957	Savannah, Ga.—"caught by cat"
im.	July, 1956	January, 1958	Plant City, Fla. — "shot"
im.	July, 1957	February, 1958	Hogansville, Ga.

— William P. Wharton, Groton, Mass.

White-Throated Sparrow Wintering Dates at Baltimore.—In the northwestern suburbs of Baltimore, an area just above the Fall Line, the White-throated Sparrow *(Zonotrichia albicollis)* arrives in late September or early October and is then seen until about mid-May; for the period 1951-1957 my extreme dates are September 27 and May 17. Observation of some color-banded