

across the western Atlantic, and this is a major advance in our knowledge of migration through the area."

The second article is called "Weather and Migration". In reaching conclusions all the data through three successive springs were coded and fed through a computer. It was found that "migration was denser when the temperature was high, when the pressure was low or falling, when the humidity was not too high, and when the wind was from the south or east (rather than from the west or north)". "Birds have evolved a mechanism for predicting the weather; they not only avoid bad weather near their starting point, but arrive at their destination in good weather for subsequent survival." There was found "evidence that migrating birds are capable of doing four things which were thought impossible in 1959 - to correct for wind drift at night; to orient accurately under overcast skies at night; to fly non-stop for four or five days without running short of food or water; and to predict the weather by assessing the pattern of a number of key factors instead of responding blindly to the two or three most obvious weather factors".

"Most of the birds netted on the coast are found to be immature birds of the year, so what we observe appears to be the sorting-out process by which the less competent and less experienced birds are eliminated from the population, before they have a chance to breed and perpetuate their incompetence in their descendents." (What do you think of this, O.R. participants?)

"With few exceptions, ground observers miss the densest movements seen on radar and the largest arrivals of birds which they notice usually follow relatively sparse movements in disturbed weather." Previous studies along this line "have not been recording maximum migration but maximum interruption to migration".

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MIGRATION CASUALTIES...THAT LIVE

By Ralph K. Bell

Since "skulling" of our songbirds to determine age is becoming more commonplace, I'm sure others have noticed that some skulls are indented, apparently as the result of hitting some object. Since I have not noticed anything in the literature about indented skulls, I decided to write this short note.

A record was kept of all observed indented skulls found during the fall migration of 1966. They are listed as follows with band numbers first, then species, age, sex (when known), where captured, date and location of indentation.

| | | | | | |
|-----------|---------------------|-------|-------------|----------|---|
| 111-01946 | Blackpoll Warbler | A. M. | Red Creek | Sept. 30 | Dent on right side of skull |
| 111-01991 | Magnolia Warbler | A.M. | Red Creek | Oct. 2 | Large indentation on left side of skull |
| 111-02381 | Myrtle Warbler | A.M. | Clarksville | Oct. 8 | Dent on right side of skull |
| 111-02548 | Slate-colored Junco | A. | Red Creek | Oct. 22 | Dent on left side of skull |
| 111-01554 | Slate-colored Junco | A. | Red Creek | Oct. 22 | Dent on left side of skull |
| 111-01568 | Golden-cr. Kinglet | A. | Red Creek | Oct. 22 | Dent on top of skull |

It is interesting to note that all were adults and this would indicate that their "accident" had happened during an earlier migration, either spring or fall. However, it should be pointed out that I usually look at the back of the skull first to determine ossification and if they are immatures, the fore part of the skull would not necessarily be checked as would be the case with adults.



All this brings up some questions, such as: Does this affect the birds' habits in any way? Does it affect orientation? Are some of the rarities that show up on the east coast the result of improper orientation due to a collision with TV towers, buildings, and so forth?

Since I skulled birds for other banders also, it is impossible to be absolutely accurate as to the percentage of indented skulls found. It is at least 1% of birds skulled and could be much more if the whole skull of every bird had been examined. This seems to me a pretty high average and is really food for thought.

The photograph on the preceding page is included to illustrate better what to look for. I had deliberately indented the skull of an already-dead House Sparrow and removed the skull covering.

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