falling inflection, often followed by three shorter notes, each a very little higher than the preceding note—'*wheeoo, woo, woo, woo.*'

I think I got the term "love song" for the second of these from Bradford Torrey, but I have never applied it to the first, the wail or whinny, and I should not agree with Mr. Bent in using it for Thoreau's Screech Owl described in 'Walden.' Now from later observations I am inclined to call it the courtship song and to consider the wail to be the territorial song.

This revision of my contribution to the "Life Histories" leaves it in substantial agreement with Dr. Tyler's description of these notes on page 257.

When an author corrects in print a published statement of his own, it is a good custom for owners of copies of the publication containing the statement to make the correction in their copies, and it is in the hope that readers will follow that custom that I have written this note.—FRANCIS H. ALLEN, *9 Francis Ave., Cambridge, Mass.*

Air-sacs in the English Sparrow.—These observations were secured in connection with an investigation to determine a desirable method for tracing the air-sacs in birds. The English Sparrow, *Passer domesticus*, and the Rock Dove, *Columba livia*, were used because both were abundantly available and because most work on avian air-sacs has been based on the latter. The literature on the air-sacs of the Pigeon or Rock Dove is so comprehensive that it was thought best for purposes of this discussion to contrast the system in the English Sparrow with that of the Pigeon. Nomenclature is that of Müller (Smiths. Misc. Coll., 50: 365–414, 1908).

The Department of Biology at Clark University furnished facilities and materials for the investigation. I am indebted to Dr. R. F. Nunnemacher for counsel and encouragement.

Method.—Both Woods Alloy and Latex were used as media of injection through the trachea. Although Woods Alloy has enjoyed the praise of many investigators, especially Gilbert (Auk, 56: 57–63, 1939), I found its use inconvenient because of the necessary temperature controls, particularly in the smaller English Sparrow. I found pigmented Latex superior to the alloy in that no temperature controls were needed and the resulting molds were elastic, permitting freer examination.

In the Pigeon I was able to secure molds of finer detail than those shown in Gilbert's plates of "casts" (which really are not casts at all but rather internal molds), including the extensive osseous sacs of the pelvic girdle and of all the vertebrae, by maintaining higher temperatures during a slower drip process of injection with Woods Alloy. The word cast is defined here to indicate a copy of the original; mold, the original in reverse.

The Primary Air-Sacs.

The Sacci Cervicales: The cervical air-sacs are in direct communication with each other, only a medial line indicating their dual origin. The resulting sac is symmetrical and tongue-shaped in the mold; its apex extends forward to the tenth cervical vertebra. No pars ovalis is apparent. The cervical system of diverticula is present, though neither the canalis intertransversarius nor its diverticula pneumatize cervical vertebrae anterior to the third. (Perhaps the system reaches the atlas, as in the Pigeon, but if so it was not indicated by the Latex method of injection.) Ventral to the most posterior cervical vertebra each cervical air-sac communicates with the interclavicular sac. The thoracic system of diverticula is wanting.

The Saccus Interclavicularis: The interclavicular sac encases the anterior part of the thoracic cavity; it is not ostensibly divided into a medial and two lateral chambers. The former is present only in the form of two delicate flaps in the mold which form

the roof of a passageway for the trachea entering the thoracic cavity. The subscapular and axillary diverticula are prominent as in the Pigeon. The humerus, however, is only insignificantly pneumatized, the axillary diverticulum hardly penetrating the pneumatic foramen. There are two tiny fringed diverticula whose homologies are not clear to the writer, one in front and one behind each axillary diverticulum. The interclavicular air-sac forms a broad medial connection with the coalesced anterior intermediate sacs.

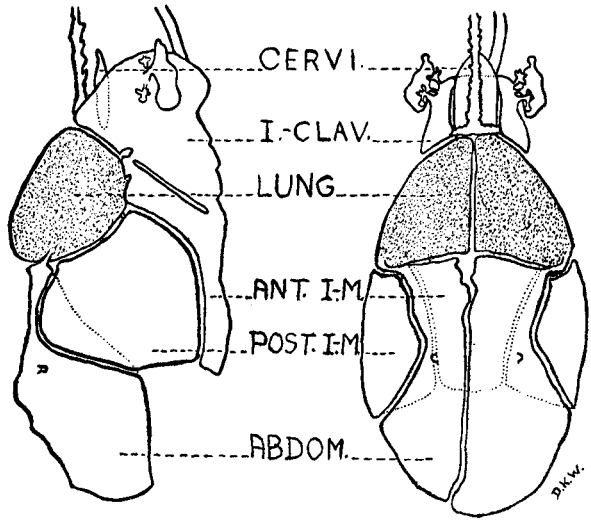

FIGURE 1. Lateral and dorsal view of primary air-sacs of the English Sparrow.

The Sacci Intermedii Anteriores: Here the English Sparrow departs most radically from the Pigeon. I suspect the large symmetrical sac coincident in outline with the sternum and just above it is a coalescence homologous to the pair of anterior intermediate sacs of the Pigeon. In addition to the broad medial connection with the interclavicular sac, mentioned above, there is a tubular (in the flesh) intrathoracic connection with this sac. Also the latero-ventral edge of the lung is strongly attached to the anterior sac.

The Sacci Intermedii Posteriores: The posterior intermediate sacs are paired as in the Pigeon, and the left sac is slightly larger than the right. In proportion to size these sacs in the English Sparrow are very much larger, occupying the position of both sacci intermedii of the Pigeon. They have regular edges and are not connected with any other sac.

The Sacci Abdominales: The paired abdominal sacs differ least from those of the Pigeon. The mold of these sacs encloses the viscera as do the shells of a nut. The right sac is larger. Tiny diverticula are present about the inguinal region. Neither the femur nor the pelvic girdle is pneumatized.

Summary.—Latex molds of the air-sac system of the English Sparrow indicate that in addition to the interclavicular sac two other sacs have coalesced with their complements across the median line—the cervical sacs and probably the anterior intermediate sacs. Further simplification of the system in this species as compared to that of the Rock Dove is the lesser number of pneumatized bones, only the cervical

vertebrae being penetrated to any extent in the material examined. Homology of the large sac above the sternum is problematical; embryological investigation and comparison with other passerine species is needed to verify my supposition that this sac is the anterior intermediate.—DAVID K. WETHERBEE, *Biology Department, Clark University, Worcester, Massachusetts.*

NOTES AND NEWS

STUDENT MEMBERSHIP AWARDS FOR 1951 SELECTED BY THE A. O. U. COMMITTEE ON EDUCATION

Samuel Andrew Arny, Louisiana State University, Baton Rouge
Charles Omar Bartlett, University of Wisconsin, Madison
Henry Lonsdale Bird, Bowdoin College, Brunswick, Maine
Donald James Burdick, San Jose State College, San Jose, California
Charles C. Carpenter, University of Michigan, Ann Arbor
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THE AMERICAN ORNITHOLOGISTS' UNION AND CONSERVATION

SINCE 1884 the American Ornithologists' Union has had a Committee on Bird Protection. In its early days the committee played a very active part in saving many plume species from virtual extinction at the hands of the millinery trade. The National Association of Audubon Societies—or, as it is now called, the National Audubon Society—which grew out of this early militant phase of the Committee's work has done a magnificent job in the 45 years of its existence and deserves all the support we can give it.

No one organization, however, can do everything that needs to be done for bird protection in an area having nearly 200 million people and covering a large part of the continent. This is especially true today, as population pressures and improved technology threaten soon to leave little unexploited land. In view of this situation, has the A. O. U. Committee on Bird Protection any right to sit on the sidelines and simply document annually for the membership the sad story of wildlife decline, without itself raising a hand to do anything about any of the many problems that are crying out for attention in every county in the land?

Have we the right to shirk all responsibility by saying that the National Audubon Society should do it? To date it has put $41,742 into its Ivory-billed Woodpecker, California Condor, and Whooping Crane projects alone, of which only $12,380 has as