Avian Skeletal Articulation

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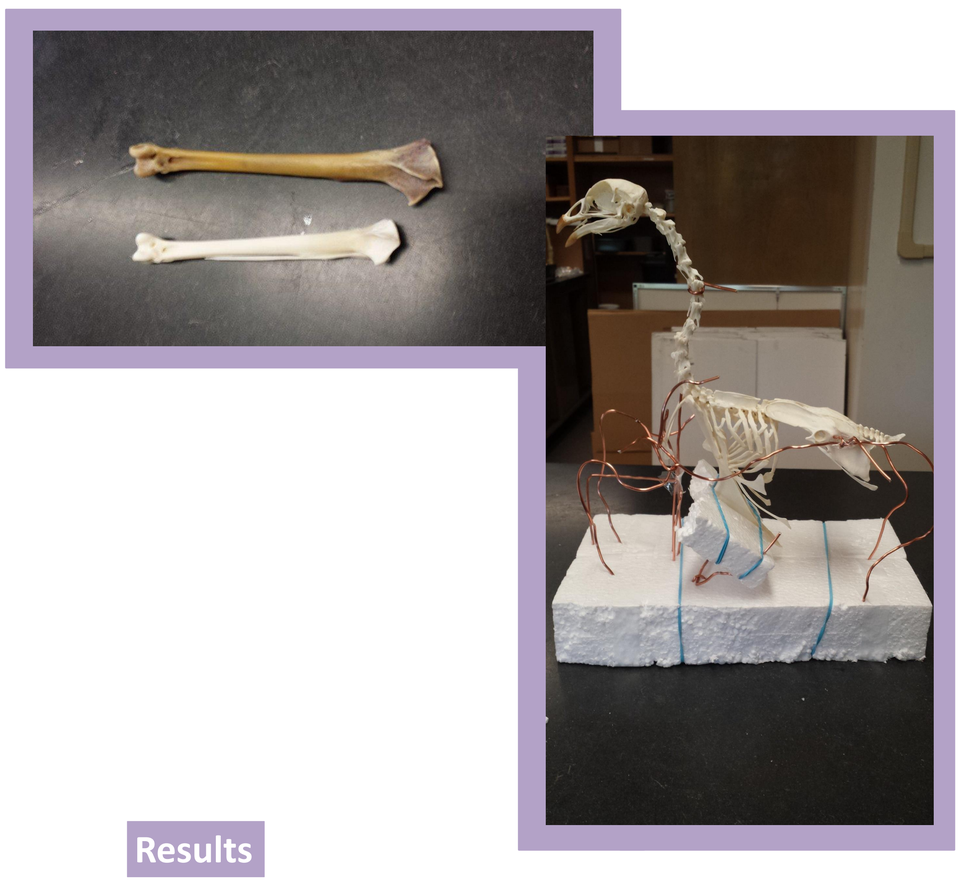
Introduction

An articulated skeleton is a mounted skeleton with various parts connected in such a way as to demonstrate normal relationships between components as in the living body. These types of models are very complex and require numerous hours of research and labor put into them. The United States is the number one producer of poultry in the world. Therefore, a great knowledge and understanding of the chicken is necessary to provide adequate care for the raising of these animals. Gallus domesticus, or the domestic chicken was the focus of this project for later use in Animal Science courses offered on campus. Students will use these models as study tools in order to better understand the anatomy of the chicken.



Methods

1. **Obtain an specimen.** The two chickens that I worked with were donated from a local backyard farm.
2. **Remove all tissues from the specimen.** Removing the skin first is easiest so that you can view the muscles more easily and ensure that once you start cutting muscle away you will not accidentally break any bones. Remove as much of the muscle as possible and then remove the organs.
3. **Boil the specimen until the remaining tissues fall off and bones easily break away from one another.** When boiling my chickens it took about 4 hours each until they were ready.
4. **Remove cartilage and remaining tissues.** This involves hours of time by scraping and scrubbing.
5. **Soak bones in acetone.** This acetone soak will remove the oils within the bones so as to discourage deterioration of the bones.
6. **Soak the bones in peroxide.** Soaking in peroxide will whiten the bones to make them ideal for display.
7. **Seal bones.** This too discourages deterioration.
8. **Put it back together again!** Through the use of epoxy, super glue, and wires the skeleton is put back together properly. To ensure anatomically correct specimens, much research is done.
9. **Mount the finished skeleton.** There are different mounting options. You must consider where the specimen will be stored in order to choose a mount that will display it suitably.

Results

There were very few differences found when comparing the rooster and hen. The most obvious difference is the size. The rooster is notably larger than the hen even though he is younger than she is. This is due to the nature of growth. Roosters must be larger to protect their mates and fight off intruders. The rooster also has an extra tool for fighting that the hen does not have. These sturdy and pointed accessories are found laterally on the tarsometatarsus. The rooster also had more cartilage around the bones than did the hen. This could be due to the fact that the rooster is younger and has had less bone development than the hen.

Conclusion

Articulated skeletons are a very useful tool for students studying anatomy. These two skeletons will be used by numerous students for years to come. There were minor differences found between the two skeletons. A lot of patience and effort is put into this type of project and requires numerous hours of time.