ISSN: 1220-3173; E-ISSN: 2457-7618

CHARACTERISTICS OF MODERN ARTIFICIAL BODIES USED IN BIRD TAXIDERMY

CARACTERISTICILE CORPURILOR ARTIFICIALE MODERNE UTILIZATE ÎN TAXIDERMIA PĂSĂRILOR

M. CIOBANU[1)], C. BELU[1)], Sorina-Andreea MIHAI[1)], I. TOADER[2)], Cerasela Otilia MARINAȘ[3)], G. PREDOI[1)]

ABSTRACT | REZUMAT

Starting from the simplest artificial bodies made of paper/paper wrapped with thread, without using any anatomical landmarks,we have nowadays reached the production of complex and anatomically complete artificial bodies. This has been made possible primarily by a thorough anatomical study of the bird's natural body (carcass), combined with morphological framing of the bird, and access to modern, high-performance materials (high-density polyurethane foam). Modern artificial bodies made on the basis of detailed measurements, using anatomical elements as references, are one of the most important steps in the naturalisation process, thus ensuring anatomically correct reproduction of the bird's natural body. In this article, two state-of-the-art artificial bodies corresponding to static and dynamic/flying postures are examined in detail. In general conclusion, in modern taxidermy, the use of artificial bodies ensures faithful reproduction of the shape and dimensions of the carcass, according to the chosen posture. The introduction of complex artificial bodies in the naturalisation process represents a real success in professional taxidermy, with the exhibits obtained reaching the highest level of performance.

Keywords: taxidermy, bird, carcass, artificial body

Pornind de la cele mai simple corpuri artificiale realizate din hârtie/talaș înfășurat cu ață, fără a fi utilizat niciun reper anatomic, s-a ajuns în zilele noastre la realizarea unor corpuri artificiale complexe și complete din punct de vedere anatomic. Acest lucru a putut fi posibil, în primul rând, datorită studiului anatomic amănunțit al corpului natural al păsării (carcasei), corelat cu încadrarea morfologică a păsării respective, și a accesului la materiale moderne, performante (spumă de poliuretan de densitate înaltă). Corpurile artificiale moderne realizate pe baza măsurătorilor detaliate, utilizând ca repere elementele anatomice, reprezintă una din cele mai importante etape din procesul de naturalizare, asigurând prin aceasta, reproducerea corectă din punct de vedere anatomic al corpului natural al păsării. În prezentul articol, se analizează amănunțit două corpuri artificiale de ultimă generație corespunzătoare posturilor statică, respectiv dinamică/zbor. Ca o concluzie generală, în taxidermia modernă, utilizarea corpurilor artificiale asigură reproducerea fidelă a formei și dimensiunilor carcasei, conform posturii alese. Introducerea corpurilor artificiale complexe în procesul de naturalizare reprezintă un real succes în taxidermia profesională, exponatele obținute atingând cel mai înalt nivel de performanță.

Cuvinte cheie: taxidermie, pasăre, carcasă, corp artificial

Over the years, there has been a continuous evolution in the production of artificial bodies made of polyurethane foam, balsa wood, wood shavings and used in bird taxidermy (1). Starting from the simplest artificial bodies made of paper/paper wrapped with thread, without using any anatomical landmarks, we have nowadays reached the production of complex and anatomically complete artificial bodies.

This has been made possible primarily by a thorough anatomical study of the bird's natural body (carcass), combined with morphological framing of the bird, and access to modern, high-performance materials (high-density polyurethane foam) (2,3).

Modern artificial bodies made on the basis of detailed measurements, using anatomical elements as references, are one of the most important steps in the naturalisation process, thus ensuring anatomically correct reproduction of the bird's natural body (5,6).

The year 2015 was a milestone in the evolution of artificial bodies when world champion American taxidermist Shane Smith created a revolutionary new design for artificial bird bodies (4).

In this article, two state-of-the-art artificial bodies corresponding to static and dynamic/flying postures

1) University of Agronomical Sciences and Veterinary Medicine, Faculty of Veterinary Medicine, Bucharest, Romania
2) DSVSA, Buzău, Romania
3) Hera's Clinic Vet, Bucharest, Romania
*) *Corresponding author: liviumircea19@yahoo.com*

are examined in detail.

The study of these artificial bodies has led to the presentation of anatomical areas and elements, and to our contribution to their improvement by adding and highlighting the area where the artificial trachea enters the artificial body according to the natural model. This was done by studying two carcasses of mallard (*Anas platyrhynchos*) with the neck and trachea attached. The coordinates of the point where the trachea enters the body were determined (8).

Attaching the artificial trachea to the artificial body exactly where the natural trachea enters the natural body gives the exhibit a natural appearance when the bird is naturalised in postures where the neck area is highlighted (7).

MATERIALS AND METHODS

The materials used in this study were: two modern artificial bodies of the mallard (*Anas platyrhynchos*) made of high-density polyurethane foam, suitable for static and dynamic/flight positions, two large duck (*Anas platyrhynchos*) carcasses, calliper, and camera.

The working method followed the following steps:

Determining exactly where the trachea enters the body by studying the mallard (*Anas platyrhynchos*) carcasses and based on measurements and transposing this to the artificial body (Fig. 1).

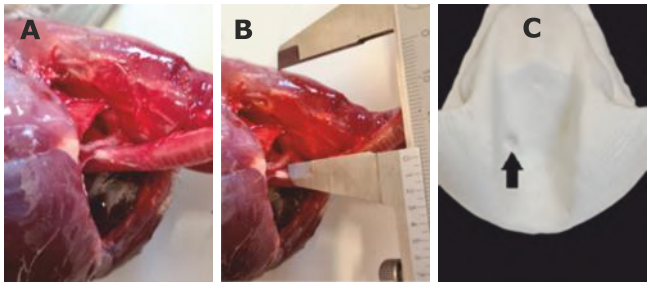

Fig. 1. Example of measurements made at the carcass level and their transposition to the artificial body level. A- The place where the trachea enters the thoracic cavity on the carcass; B- Measurements taken to maintain natural ratios; C- The artificial body with highlighting of the place of attachment of the artificial trachea (black arrow represents the area of the trachea) (original)

A detailed description of the anatomical areas and elements of the two artificial bodies and their role in the naturalisation process.

RESULTS AND DISCUSSIONS

The shape of the two artificial bodies faithfully follows the anatomical landmarks. Particular attention should be paid to the four distinct areas for the attachments of the: neck, wings, limbs and tail. This ensures a full range of movement of the attached segments, contributing to the correct naturalisation of the birds in a variety of static and dynamic postures, while maintaining anatomical proportions.

These characteristic areas are described in the following subsections.

The shape of the body

For dynamic postures (flight), artificial bodies have a slightly curved axis of the body, a greater distance between the scapulo-humeral joints (shoulder joints), and a flatter chest, giving a realistic shape to naturalised birds in flight with outstretched wings (Fig. 2).

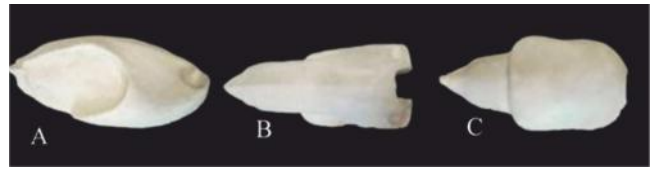

Fig. 2. The artificial body shape in dynamic postures A - lateral view; B - dorsal view; C - ventral view (original)

For static postures, the bodies show a more curved axis of the body, narrow shoulders, and a more rounded and narrower chest, giving the naturalised bird a "bristly" appearance (Fig. 3).

Fig. 3. Artificial body shape in static postures A - lateral view; B - dorsal view; C - ventral view (original)

Neck cavity

It is very close to the natural pattern but much deeper. This allows an easy transition from full flexion in static postures to full extension in dynamic postures.

The point where the artificial neck attaches (the point corresponding to the vertebral column) is highlighted at the top and the point where the trachea enters the body is highlighted on the right (Fig. 4).

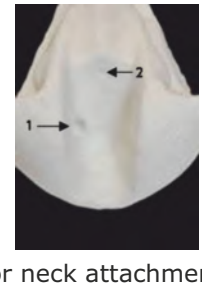

Fig. 4. Cavity for neck attachment – frontal view (original); 1- point of the trachea; 2- neck point

The joints and wings area

The articular cavity of the shoulder allows full movement of the wings, in all directions (Fig. 5).

For naturalized birds in dynamic postures (flight), the wings can be mounted in extreme positions while keeping the feathers in place. The patagial tendonis also anchored to the artificial body, which causes the feathers to sit correctly no matter the position of the wings.

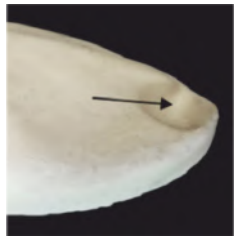

Fig. 5. The articular cavity of the shoulder on the artificial body – black arrow (original).

For naturalized birds in static postures, the conformation of the articular cavity allows the wings to fold with precision and ease. The lateral spaces, with which these artificial bodies are provided, are deeper than those used for dynamic positions (flight) so that the wings fit and look perfectly (Fig. 6).

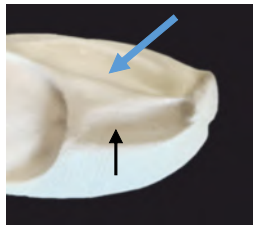

Fig. 6. The excavations are intended for wing segments (original). Blue arrow - the surface intended for the humerus, radius, and ulna; black arrow - the surface intended for the metacarpophalangeal region.

The joints and leg area

Based on the measurements, the hip rotation point (coxo-femoral joint) will be correctly indicated (Fig. 7). After mounting the bird, the legs can be arranged in any position, depending on the desired posture, static or dynamic, they have a full range of movements - rotation, extension or flexion.

Fig. 7. The highlighting of the hip rotation point on the artificial body - Black arrow - coxo-femoral joint point (original)

The tail area

The space for the caudal feathers is well-defined, ensuring a perfect arrangement of the tail. During the mounting process, the area of the caudal feathers is cut from the artificial body, under the angle at which the tail is to be positioned (Fig. 8).

Fig. 8. The highlighting of spaces for caudal fin attachment (white arrows) (original)

CONCLUSIONS

The use of artificial bodies in professional taxidermy ensures faithful reproduction of the shape and dimensions of the carcass, according to the chosen posture, the naturalisation of the birds in the most varied postures while preserving anatomical proportions, easy mounting of the birds and a substantial reduction in working time, and a final appearance of the naturalised bird identical to that of the living bird. Thanks to these characteristics, the introduction of complex artificial bodies in the naturalisation process represents a real success in professional taxidermy, with the exhibits obtained reaching the highest level of performance.

REFERENCES

1. *Balo N.,*(2013), Bird Anatomy for Artists, First Edition, (Ed.) Blackman Consulting Pty Ltd, Australia
2. *Church C.,* (2012), Bird taxidermy – The Basic Manual, First Edition, (Ed.) British Historical Taxidermy Society, Essex, UK
3. *Coțofan V., Predoi G.,* (2003), Topographic anatomy of domestic animals, (Ed.) BIC All, Bucharest, Romania (in Romanian)
4. *Gadd M.,* (2018), Universal bird taxidermy measurement sheet help, (Ed.) UK Bird & small mammal Taxidermist, Yorkshire, UK
5. *Predoi G., Georgescu B., Belu C., Dumitrescu I., Șeicaru A., Roșu Petronela Mihaela,* (2013), Comparative anatomy of domestic animals: Osteology, arthrology, myology, (Ed.) Ceres, Bucharest, Romania
6. *Smith S.,* (2015) , New Bird Bodies, Available at: https://www.taxidermy.net/ken/?p=1407 (Accesed: 21.02.2023)
7. *Taylor M.,* (2020), The Pocket Book of the Bird Anatomy, (Ed.) Bloomsbury Wildlife: Bloomsbury Publishing PLC, London, UK
8. *Van Grow K.,*(2013), The Unfeathered Bird, (Ed.) Princeton University Press, Princeton, NJ, USA.