Accidental injuries affecting the Roe-Buck trophy quality in the context of the long-term management of the game

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1. Introduction

Due to the coloegical plasticity implying a prevalence of the roe-buck (*Capreolus capreolus* L.) on a large part of the Romanian territory, the species has a special importance. The main goal of the species cinegetical management is the production of superior class trophies in a number as large as possible, related to the productive area of the cinegetical territory.

Besides this fundamental goal, the judicious management of the roe-buck populations may also bring numerous direct and indirect benefits. Among the direct benefits, we first mention the meat capitalization, which is considered the best of all the cervidae species in Romania, gastronomically speaking. Then, we may mention the skin capitalization in tannery, or the capitalization of the legs, adequately preserved as decorative objects or as food. Among the indirect benefits, we first mention the aesthetical effect of the roe-bucks near the roads, railways and localities. Their delicate and beautiful build enchants the grow-ups and especially the children (Almăşan 1967).

To resume to the main goal of roe-buck population management, this means obtaining trophies of high cinegetical standard.

The assessment principles of the trophy value, in the form in which they were officialized by the International Council of Hunting and Game Conservation derive from the general principles of the normal and vigorous development of the roe-buck specimens. The antlers' volume and weight have priority over the other trophy measures, as they are a direct expression of the specimen's vigour.

When observing the normal development of the individual on the basis of the bilateral symmetry, the antlers' symmetry and span are elements of an aesthetical quality, together with their colour, the pearlage nature, the shape and size of the roses of antlers (Cotta 1982).

As a rule, the valuable trophies are obtained from the adult males of seven to ten years old, depending on the characteristics of the living condition.

Under the aspect of the management goal, the inadequate specimens are harvested through the selection activity, in order to obtain quality trophies. The selection must be made during the first years of development, as in that period of time the differentiation by the body size is the most easily made.

In general, roe-bucks have spike-shaped antlers in their first year of development. Besides the sample size which must remain a fundamental criterion, the evaluation of the trophy potential quality is done according to the length and thickness of the first little antlers of the young specimen. Subsequently, the

antlers' development must occur normally and the specimens kept in the area should produce the desired trophies.

In contrast to the theory, in practice it has been remarked that even when the selection was adequately made at the youth number, abnormal trophies might occur at the middle-aged specimens. The anomalies at the roe-buck antlers may have various causes (Boisaubert, Boutin 1993):

- Genetic background;
- Nutritional or metabolic privations;
- Accidents which affected the testicles;
- Accidents which affected the antlers;
- Accidents which affected the skeleton.

The anomalies caused by the genetic background are permanent. The ones caused by accidents affecting the antlers may be permanent or temporary. The temporary anomalies occur in the breaking of the different parts of the antlers above the rose, as a result of the injuries suffered during the growing period of the antlers. On the other hand, the anomalies caused by accidents affecting the antlers are permanent when one or both frontal cylinders were affected.

Due to the fact that the roe-buck antlers are of bony constitution, the skeleton injuries produce permanent anomalies of the antlers. The phenomenon is due to the fact a certain part of the substance of which the antlers are made, comes from the bony structures. The roe-buck antlers grow up during wintertime, when the nourishment conditions are more difficult. Because of this, any single injury occurred at skeleton level is likely to produce anomalies in the antlers' development, as the material necessary for the antlers to grow comes partially from the skeleton (Goicea 2002).

The injuries upon the skeleton may occur mainly because of the hunting activities, the poaching or because of the car accidents. The injuries may also occur during the mating period, when the males fight to one another.

2. Materials and methods

This paper analysed the influence of the skeleton injuries upon the antlers' development at two roe-buck specimens hunted in Suceava county: one on the cinegetic territory nr. 55 Mitoc managed by the Faculty of Forestry Suceava (specimen no. 1) and the latter, hunted on the cinegetic territory 49 Mihoveni, managed by AJVPS Suceava (specimen no. 2).

The weight and the length of the affected bones were analysed in comparison with the healthy, normal bones.

3. Research results

In both cases, a long bone of the legs (the tibia) was affected because of an accident, the fractures being located in the diaphyse area (the middle part of the

long bone). As a consequence of the injury, a local infection was produced and it affected the periosteum (the bone generating membrane). Specimen nr. 1 had its dentition damaged, as the two central incisor teeth had been broken.

After the body had managed to keep the infection under control, the generating membrane destroyed by the injury or by the infection started to regenerate itself. Thus, it obviously follows that besides the nutritional privations caused by the limited walking possibilities during the recovery period, the specimen consumed a large amount of calcium salts and phosphorus for the callusing of the respective bones.

Both phenomena are reflected by a lack of organic matter necessary for the normal development of the antlers.

In case 1, because of the nutritional privations, the normal growth of the antlers was totally compromised, these ones developing an abnormal shape (photo 1). In case nr. 2, the antler corresponding to the injured part was obviously affected, the trophy developing an asymmetrical shape (photo no. 2).

According to the size analysis, both specimens were vigorous and of normal size before the accident.

The periosteum cells activated by the hormone mechanism begin to produce bony matter which calluses the respective fracture. Due to the fact that in the injured area a dysfunction of the blood circuit was produced, the depositing of the callus construction material cannot follow the genetic pattern anymore, the repairing development of the bone being abnormal.

Photo 1. Specimen no. 1 F.V. 55. Mitoc - USV

Photo 2. Specimen no. 2 F.V. 49. Mihoveni - AJVPS

The fractures being permanent due to a tonic contraction of the musculature remained or the musculature in recovery, an obvious shortening of the bone was produced, in comparison with the pair bone of the normal leg (photo no. 3 and photo no. 4).

Photo 3. The specimen tibies 1 F.V. 55. Mitoc - USV

Photo 4. The specimen tibies 2 F.V. 49. Mihoveni - AJVPS

The recovered bone is heavier than the normal bone and the affected tibias are shorter, as one can see in table no. 1.

Table 1. Comparative dimensions of specimen tibias analysed and their weights

Nr. crt.	Specifications	Normal corresponding bone length		Recovered bone length		Normal corresponding bone weight		Recovered bone weight	
		cm	%	cm	%	g	%	g	%
1	Roe-buck nr. 1	25,7	100	24,7	96	110	100	190	172
2	Roe-buck nr. 2	27,2	100	21,3	78	110	100	120	109

It is interesting to notice that at specimen no. 1, the weight of the injured tibia goes up to 172% and its length diminishes with 4% in comparison with the normal leg. On the other side, at specimen no. 2, the length diminishes with 22%, but its weight goes up only to 109%. Probably the nature and the position of the injury on the tibia influence these values, but it is also the age of the specimen which counts. The dentition analysis of the two specimens' shows that both of them were adult specimens of 5 – 6 years old (photo 5 and photo 6).

Photo 5. Specimen dentition 1 F.V. 55. Mitoc - USV

Photo 6. Specimen dentition 2 F.V. 49. Mihoveni-AJVPS

Taking into consideration the development way of the antlers at the two specimens, the conclusion is that the abnormality is permanent.

4. Discussion and conclusions

As a consequence, the useful suggestion is that such specimens with antlers affected by accidents should be rapidly eliminated, irrespective of the legal period of hunting. Besides the fact that a rigorous selective action is performed through the injured specimen harvesting from the total effective, it is also recommended from an ethical point of view.

The immediate selective action releases the injured animal from pains, as it would be impossible for it to get proper food and to endure a long term infection.

It is also necessary a strict selection of the hunters who pine after the roe-buck hunting and we recommend a compulsory check-out of their skills on the testing polygon.

It is also very important to breed and to train the professional dogs, thus permitting the rapid recovery of the possibly injured specimens.

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Abstract

Accidental injuries affecting the Roe-Buck trophy quality in the context of the long-term management of the game

This article presents the comparative analysis of two situations of trophy evolution for two injured roe-bucks (males). In both cases, a long bone of one of the legs (the tibia) was affected because of an accident, the fractures being located in the diaphyse area (the middle part of the long bone). Both phenomena are reflected by a lack of organic matter necessary for the normal development of the antlers.

One can notice the increase in thickness and the shortening of the big bones of the legs together with the modification of the trophy's classic form.

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weight goes up only to 109%. Probably the nature and the position of the injury on the tibia influence these values, but it is also the age of the specimen which counts.

Keywords: selection, roe-buck, injury.

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