

**VASILE GHEȚIE (1903-1990)**  
**- SCIENTIFIC ACHIEVEMENT FROM TODAY'S PERSPECTIVE -**  
 VASILE GHEȚIE (1903-1990)  
 - APRECIERE ȘTIINȚIFICĂ DIN PERSPECTIVA DE ASTĂZI -

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**ABSTRACT | REZUMAT**

Thirty years after the death of Professor Ghetie it is appropriate to honour his scientific work. Ghetie was born in Maramuresh as son of an orthodox priest. He grew up trilingual. Besides his mother language, he spoke fluently Hungarian and German. Already during his studies, he was employed as a scientific assistant in the anatomy. Three years after his doctorate, he went to Budapest to Prof. Zimmermann for six months. In 1938 and 1939 he was sent to Leipzig to Professor Eberhard Ackerknecht, where he participated in the textbook *Ellenberger und Baum*. He made several anatomical drawings. Ghetie left 2 didactic horse sculptures in Leipzig. During his life Ghetie wrote several atlases and textbooks for students.

Ghetie's scientific activities were mainly focused on the fields of neuroanatomy and poultry anatomy. Ghetie broke new ground with his research objectives the central nervous system and the autonomic nervous system. 20 years later comparable research appeared in western countries. The *Atlas of Poultry Anatomy* was also translated into Spanish. Today Ghetie counts among the great anatomists of the 20th century such as Baum, Barone, Ellenberger, Grau and Schmaltz.

The most famous students of Ghetie are Gheorghe Constantinescu, Missouri and Vasile Cotofan, Jassy.

**Keywords:** Ghetie, neuroanatomy, poultry anatomy, scientific achievement

La treizeci de ani după moartea profesorului Ghetie este adecvat și merită să se analizeze acum opera lui din punctul de vedere științific. Ghetie s-a născut în Maramureș. A fost fiul unui preot ortodox și a fost educat de copil în trei limbi. Vorbea în mod curent, pe lângă limba lui maternă, limbile maghiară și germană. Încă din timpul studiilor de medicină veterinară la București, el a fost angajat ca preparator la catedra de anatomie. După terminarea doctoratului a plecat pentru șase luni la Budapesta la profesorul Zimmermann. În anii 1938 și 1939 a fost trimis la specializare la Facultatea de Medicină Veterinară din Leipzig la catedra profesorului Eberhard Ackerknecht. În Muzeul de Leipzig a lăsat două sculpturi didactice despre anatomia calului. La Institutul din Leipzig a lucrat la ediția 18 a tratatului *Ellenberger/Baum*, pentru care a efectuat mai multe desene. În cursul vieții sale Ghetie a scris multe cărți și atlasuri didactice.

Activitatea științifică a lui Ghetie s-a concentrat mai ales în domeniul neuroanatomiei și anatomiei păsărilor. Cu cele două cărți despre sistemul nervos central și despre sistemul neurovegetativ, Ghetie a pășit pe terenuri științifice noi. A durat 20 de ani până ce în Germania au apărut tratate asemănătoare. Atlasul său despre anatomia păsărilor a fost tradus și în limba spaniolă. Numele lui Ghetie poate fi pus alături de cel al marilor anomiști ai secolului 20 precum Baum, Barone, Ellenberger, Grau și Schmaltz. Elevii lui cei mai cunoscuți sunt Gheorghe Constantinescu, Missouri și Vasile Cotofan, Iași.

**Cuvinte cheie:** Ghetie, neuroanatomie, anatomia păsărilor, importanța științifică

Thirty years after the death of Vasile Ghetie, an appreciation of his scientific activity seems appropriate from today's perspective.

Ghetie was born in 1903 in the village Berința in the Maramuresch in the north of Romania as second of 9 children. He died on Christmas Day 1990, his father was an Orthodox priest, a respected figure in the rural Romanian village. Already as a child and during his youth he learned the Hungarian and German language, as the Maramuresch belonged to Austria-Hungary at that time (10). German should be very useful to him later. After elementary school he graduated in Hungarian language in the city of Baia Sprie. He studied veterinary medicine at the Faculty of Veterinary Medicine in Bucharest between 1922-1927. Already during his studies, he was interested in anatomy and

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was employed as a taxidermist, today this position would be called a scientific assistant. One year after finishing his studies he received his doctorate.

Three years after his doctorate, he went to the renowned Anatomical Institute in Budapest, to August Zimmermann for six months, where his language skills were very useful to him. At the Budapest University of Veterinary Medicine, he refined the methodology of his scientific work (10). During a further two-year stay abroad with Prof. Eberhard Ackerknecht in Leipzig in 1938 and 1939, he met Hugo Grau, who called him his best friend throughout his life (10). During this time in Leipzig he worked on the 18th and last edition of "Ellenberger / Baum", the classical German textbook for anatomy (13). In Leipzig Gheție left two didactic horse sculptures, which are now in the collection of the Anatomical Institute (Fig. 1).



**Fig. 1.** Didactic horse sculpture of V. Gheție, Museum of Institute of Anatomy, Leipzig University, Germany

The works of Gheție are manifold. He wrote didactically relevant books (6), atlases and scripts for students of veterinary medicine, which he had excellently illustrated. Several draftswomen worked at his institute for this purpose. He sent his signed atlases and books to the professors from Budapest, Munich and Vienna.

As he himself was artistically talented, he made the drafts of the drawings himself and made correspondingly high demands on the draughts women.

During his lectures he made perfect drawings on the blackboard, which never had to be corrected.

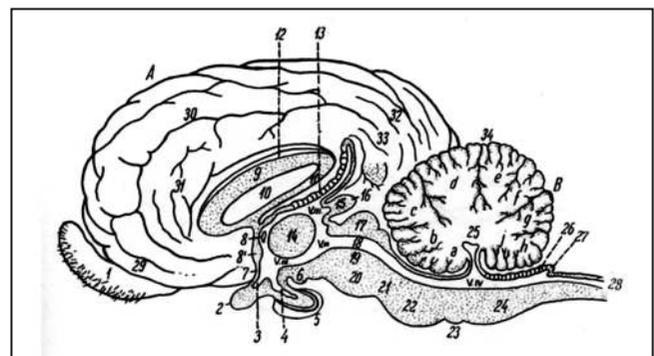
He demanded a drawing booklet from every student at the start of the exams. The exercise books were stamped and graded. Gheție was didactically extremely talented. A list of his scientific publications, his books, scripts and contributions to books can be found in his biography (13).

## SCIENTIFIC ACHIEVEMENT

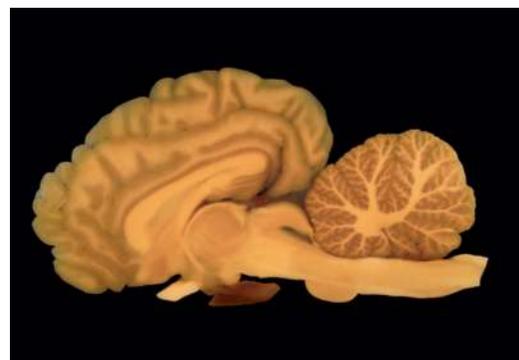
Gheție broke new ground for his time in several areas of anatomy. He was a leader in the field of neuroanatomy (4). For his book on the central and autonomic nervous system in domestic animals he received the State Prize, at that time the highest award. In this work he brought together all the knowledge of his time. He used the literature available to him and the nomenclature of the time. The book was not written for students because it was scientifically overestimated. The individual sections of the brain were preceded by the embryological and ontogenetic development up to the human being, so that the expert scientist knows how which structures in the central nervous system have developed. Gheție at that time, there were no modern methods available to depict the brain.

Plastination as the basis for the incision anatomy was later invented. Clinical sectional imaging techniques such as computed tomography and magnetic resonance imaging, which can also be used in anatomy, did not exist at that time (1, 3, 16).

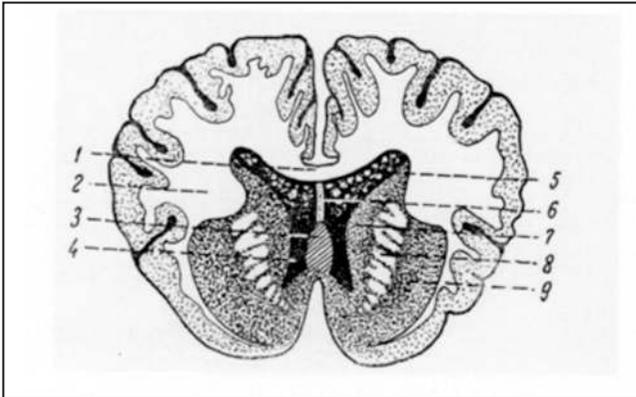
For this reason, all details of his pictures had to be shown in a drawing, with the help of the legend in his drawings indicating every detail, e.g. in the central nervous system. It would certainly have been helpful for him to contrast his drawings with plastinated sections (Fig. 2-7).



**Fig. 2.** Paramedian sagittal section through the brain of a horse (from Gheție, 1956)



**Fig. 3.** Sagittal section through the brain of a horse. P40 plastinated specimen



**Fig. 4.** Cross-section through the brain of a horse (from Ghetie, 1956)



**Fig. 5.** Cross-section through the brain of a horse. P40 plastinated specimen

On the subject of the nervous system, he wrote a second book on the vegetative nervous system in domestic mammals and domestic poultry (5). In this publication all the structures were drawn using carefully dissected specimens, especially the complicated peripheral course of vegetative fibers, which posed a great challenge in terms of both preparation and drawing techniques. With this publication, Ghetie achieved a unique scientific masterpiece that is still unsurpassed today.

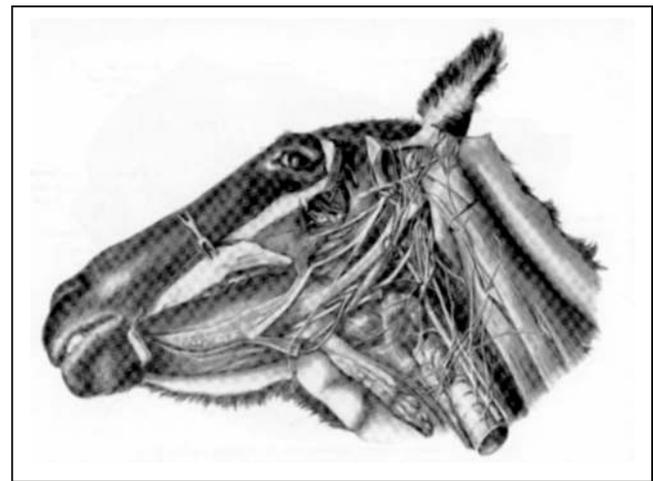
The next area in which Ghetie pioneered was the anatomy of domestic fowl (8). This book, which he wrote after his retirement, was conceived as an atlas, with legends in several languages. It was the only one of his books to be translated into Spanish and therefore found a wider international distribution. The drawings, made after original preparations, can still serve today as a model for modern publications. Illustrations for modern books were drawn from his poultry atlas and Ghetie was mentioned as the author (11, 12).

The last major work Ghetie started shortly before his retirement was a comprehensive manual on the anatomy of domestic animals (6).

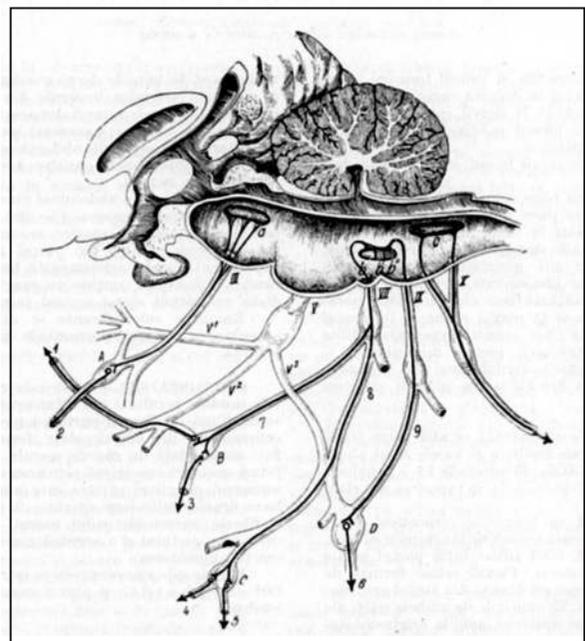
This complete work was to be written together with his former, eloquent assistant Hillebrand. But only the first volume of this project was published on the subject

of the musculoskeletal system. The text and drawings of this first volume give an idea of what a huge project Ghetie still wanted to realize. To take just one example, the description of the bursa podotrochlearis in horses is given. This important clinical structure is presented in an outstanding way. This description can therefore serve as a model and reference for any modern publication even today.

The most famous students of Ghetie are Gheorghe Constantinescu and Vasile Cotofan. Constantinescu, who still works at the Faculty of Veterinary Medicine in Missouri USA, has written several books. Vasile Cotofan was for many years head of the Department of Anatomy at the Veterinary Faculty of the University of Jassy in the north-east of Romania.



**Fig. 6.** Head nerves and vegetative structures on the horse's head (Ghetie, 1962)



**Fig. 7.** Vegetative structures on the head of domestic mammals (Ghetie, 1962)

## DISCUSSION

Gheție was a colleague with many interests. Already as a pupil he was interested in sculpture. From clay and wood, he could form natural objects and living beings. As a young man he learned to play the violin (13). Due to his artistic abilities he was already interested in morphological subjects as a student and was hired as a scientific assistant in the subject anatomy. He grew up multilingual in what was then Austria-Hungary and, in addition to his Romanian mother tongue, was able to speak fluent Hungarian and German. His specializations in Budapest and Leipzig left visible traces at the institutes there (13). They were the best anatomical educational anatomical institutes in Europe. In Budapest there is a didactic horse sculpture, which was made in Bucharest according to Gheție and completes the anatomical collection at the University of Veterinary Medicine there (10). On both sides of the sculpture the clinically significant topography of the organs of the abdominal cavity is shown. Contralateral the deep musculature of the horse's body is shown. The second horse sculpture illustrates the incision anatomy at different characteristic and clinically relevant regions.

In the time when Gheție was teaching and researching, there were hardly any international connections between scientists from different countries, and certainly not between the Eastern Bloc and the Western world. It is therefore not surprising that research was carried out in Zürich on the brain of the horse (14) and in Bucharest on a similar topic, without the corresponding scientists being able to contract with each other. Today, due to internet connections, such a thing would not be possible anymore. Access to internationally available journals was hardly allowed in the Soviet sphere of power. Even linguistically skilled scientists like Gheție were deliberately kept in isolation. This explains why the reference to the book from Gheție is missing in the bibliography of the work from Zürich (14). A comparable work on the nervous system, as Gheție had written in 1956, was only published much later, in 1975, by Seiferle from Zürich. The third edition of this book was then updated in 1992 by Böhme from Berlin (2).

The scientific drawings that Gheție inserted in his books illustrate his deep technical knowledge. At that time, they could not be correlated with clinical sectional imaging techniques or with modern plastinated sections (1,3,9,15,16,17). His extensive atlases and didactic books were sent by Gheție with a dedication to the chair holders of Munich, Grau, Budapest, Kovacs and Vienna, Schreiber.

Gheție's student, Vasile Cotofan, left in the collection of the Anatomical Institute in Jassy vivid sculptures of animals as well as paintings in oil and reliefs in metal. The sculpture of a rearing horse represents an important artistic masterpiece. Most of Cotofan's works of art are open to the public in the museum of the Institute of Anatomy of the Faculty of Veterinary Medicine in Jassy. Cotofan's three-volume textbook in Romanian served for many years as a basis for training students in anatomy.

Gheorghe Constantinescu, the second student of Gheție is still working at the Faculty of Veterinary Medicine in Missouri USA. He wrote his anatomy books in English and

they gained great international fame. Both Cotofan and Constantinescu were and are artistically talented anatomists and illustrated their textbooks with own drawings.

## CONCLUSION

From today's perspective, Gheție can be integrated into the group of the great 20th century anatomists such as Baum, Barone, Ellenberger, Grau and Schmalz. With his works he decisively influenced the European and worldwide level of knowledge of scientific veterinary anatomy.

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