HONOURED PROFESSOR GHEORGHE GHEORGHIEV'S EIGHTIETH ANNIVERSARY

To render homage to these scientists who had special contributions to the progress of the oldest Romanian University and to the development of science and culture has long become a tradition with this institution of education and training.

This year, Professor Gheorghe Gheorghiev is eighty years old, which in our troubled century represents a performance conferring the great personalities the laurels of unparalleled achievements and the idea of permanence of the achieved values. On the occasion of this jubilee, the Romanian geometers pay to Professor Gheorghiev a vibrating homage of appraisal and gratitude for his steady efforts to raising education and science on higher levels, to forming numerous young mathematicians, to modernizing and consolidating the national school of geometry.

Honoured Professor, Doctor Gheorghe Gheorghiev, the present chief of the old school of geometry in our country, is one of the renowned Romanian scientists who substantially contributed to the raising of our Mathematics. First a pupil, then a successor of the great geometers Alexandru Myller and Octav Mayer, he continued their didactic and scientific work towards the ascendant evolution of Mathematics in the city of Iași.

Belonging to the group of brilliant professors the Faculty of Mathematics of „Al. I. Cuza" University has had after the reform of education in 1948 — A. Myller, O. Mayer, M. Haimovici, Al. Climescu, I. Popa, I. Creangă and A. Haimovici — Professor Gheorghe Gheorghiev has carried on for over forty years permanent efforts to train and educate numerous generations of students, to form the young research workers.

The whole of Professor Gheorghiev's activity at the Faculty of Mathematics is characterized by a permanent care of modernizing Mathematics teaching and scientific research, of highly evaluating the traditional achievements and of forming specialists.

Professor Gheorghe Gheorghiev was borne of June 27, 1907 in the town of Bolgrad (Ismail). After finishing school in his native, town, he attended the Faculty of Sciences, section of Mathematics, of the University in Iași. Owing to his brilliant aptitudes, he was appointed assistant lecturer before finishing his studies. After graduating faculty he left for Hamburg for specialization. While a teacher at a secondary school, he prepares his doctorship thesis, which he finishes facing hardships during the war. In 1946 he is awarded the title of Doctor in Mathematics with the dissertation „Surfaces on Which Remarkable Families of Curves are Similare". Due to original scientific results obtained in research, he is appointed lecturer, and after a short while Professor at the Polytechnic Institute and at „Al. I. Cuza" University.

After having carried on a rich scientific, didactic and social activity, in 1953 Professor Gheorghe Gheorghiev is appointed Dean of the Faculty of Mathematics and Physics. He has been a competent and devoted manager of the faculty for 15 years, by ensuring it a leading place. In 1960, after Professor Octav Mayer's retirement, he becomes the chief of Geometry department. That was an important moment in the history of Geometry in Iași, which, fifteen years after the World War II, was still looking for its way in the hard field of renovations. Through a steady work, by centralizing all the forces of the department, Professor Gheorghiev succeded in preserving the brilliance which Geometry in Iași has been possesing for 50 years.

As a Professor at the Faculty of Mathematics, he manifested a high professional conscience. His lectures were based on a vast and up-to-date information. They were accessible and had a true academic tenure. He wrote numerous books and treatises of geometry for students and research workers which were praised both in Romania and abroad. Together with several distinguished professors of the faculty, he was awarded the State Prize for the volume „Analytical Geometry" issued in 1950.

His exceptional merits in scientific, didactic and social activity have lead to his being awarded, in 1964, the title of Honoured (Emeritus) Professor.

Professor Gheorghe Gheorghiev's scientific activity, carried on over sixty years, impresses through the diversity of the problems he has approached and the new directions he has discoveread, dealing with numerous fields in geometry, mechanics and applications in theoretical physics, history of Mathematics, etc. What had been started in the doctorship thesis was continued with local and global properties of surfaces, the study of surfaces neighbouring a curve, the theory of networks, in which he introduces the important concept of Dini network, the vector fields, nonholonomic varietes and applications in the mechanics of fluids.

Examining the vectors fields, he discovered the fundamental equations, fundamental theorems which he presented as methods of study in magneto-hydro dynamics. The scientific value of these researches makes us attribute nowadays Professor Gheorghiev's name to the fundamental equations of unitary vector fields in the three-dimensional Euclidean space.

Professor Gheorghe Gheorghiev studies for the first time in geometry the varietes of cones, establishing the link with V. V. Wagner's compound varietes. He co-operates with Ilie Popa in edifying the geometry of equiparametric varietes in projective, affine and Euclidean spaces. By closely following the evolution of present geometry, Professor Gheorghe Gheorghiev deals with important problems of Banach spaces modelled manifolds. He studies their extensions by generalizing the methods of E. Cartan, G. F. Laptev and S. Kobayashi. He solves difficult problems of the theory of Lie groups and pseudo-groups and discovers the distributions which Professor Gheorghiev calls structural.

In the last ten years, he dealt with the theory of hypercomplex algebras by determining new classes, with subordinated algebraic structures, which lead to new geometric structures of scientific interest, mainly in applications to the geometrization of physical fields.

Professor Gheorghe Gheorghiev's rich scientific activity took the form of a vast work which amounts to about 200 memoirs, notes, monographs and treatises, publisher in famous highly specialized reviews, both Romanian and foreign. The results of his researches have given birth to a large echo among the geometers all over the world. Many of them are to be found in doctorship theses, monographs and papers of some consecrated geometers. He has been invited to deliver lectures in old and famous academic institutes in Soviet Union, England, Italy, Hungary, Poland, etc.

In his vast scientific activity, Professor Gheorghe Gheorghiev has not been an „isolated" scientist. He always endeavoured to create an elevate scientific climate among the Romanian geometers. He initiated the modernization of Romanian school of geometry and its orientation towards practical applications.

Many of the young men of science have been apprenticed by Professor Gheorghiev. An impresive number of geometers got their doctorship under his scientific guidance. It is a reason of high satisfaction for me to list their names in chronological order : Vasile Cruceanu, Izu Vaisman, Viorel Murgescu, Constantin Aker, Froim Marcus, Vasile

Oproiu, Elena Vamanu, Gheorghe Murărescu, Mircea Craioveanu, Liliana Maxim, Aurel Bejancu, Gheorghe Zet, Adrian Roman, Gheorghe Atanasiu, Dan Brânzei, Alexandru Neagu, Valeriu Sava, Ilie Burdujan, Neculai Papaghiuc, Profira Sandovici, Constantin Fetecău, Elena Macovei, Gheorghe Procopiuc, Francisc Klepp, Victor Blănuţă and Gheorghe Munteanu. Twenty-six doctorships got under the scientific authority of Professor Gheorghe Gheorghiev is a performance in the history of Mathematics in Romania.

Professor Gheorghe Gheorghiev has also permanently consecrated his skill, devotion, gift and energy to society, by carrying on a vast political and public activity.

Even being 80 years of age, Professor Gheorghiev is still the same tireless man of science, explorer of some abstract fields of splendid profoundness and beauty.

We have the opportunity to render our respectful homage to Professor Gheorghe Gheorghiev, and we are doing it with all our love and regard that his enormous work devoted to the Romanian education and science deserves, by wishing him many years of life, health and joy.

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A CHARACTERIZATION OF MORPHISMS OF H-CONES

BY

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§ 0. **Preliminaries.** We use the theory of H-cones, as presented in [1].

Let us recall [4] that, S being an H-cone, we denote by $\tilde{S}$ the set of all mappings $\alpha : S^* \to \overline{\mathbf{R}}_+$, such that :

1) $\alpha(\mu+\nu)=\alpha(\mu)+\alpha(\nu),\ \forall \mu, \nu \in S^*$; 2) $\mu \leqslant \nu \Rightarrow \alpha(\mu) \leqslant \alpha(\nu)$;

3) $\forall F \subseteq S^*$ increasing and dominated : $\alpha(\bigvee F)=\sup\limits_{\mu \in F} \alpha(\mu)$;

4) there exists an increasing family $A \subseteq S^{**}$ such that :

$$\alpha(\mu)=\sup_{s \in A} s(\mu),\ \forall \mu \in S^*.$$

$\tilde{S}$ has a canonical structure of an ordered convex cone.

We denote by $H(S)$ the set of all parts $F \subseteq S$, which are : nonvoid increasing, solid and such that $A \subseteq F$ and A dominated in $S \Rightarrow \bigvee A \in F$ $H(S)$ was introduced by Eriksson [3]. $H(S)$ and $\tilde{S}$ are compared in [5].

Let S and T be H-cones. We call morphism of H-cones (from S to T) any map :

$$\varphi : \tilde{S} \to \tilde{T}$$

which is :

additive : $\varphi(s+t)=\varphi(s)+\varphi(t),\ \forall s, t \in \tilde{S}$,
monotone : $s \leqslant t \Rightarrow \varphi(s) \leqslant \varphi(t)$,
continuous : $F \subseteq \tilde{S}$ increasing $\Rightarrow$ $\varphi(\vee F)=\sup\limits_{s \in F} \varphi(s)$.

The domain of the morphism φ is the set :

$$D(\varphi)=\{s \in S \mid \varphi(s) \in T^{**}\}.$$

A morphism φ is called semi-finite if $D(\varphi)$ is dense in S. The set of all morphisms from S to T is denoted by $\mathrm{Hom}(S, T)$. The set of all semi-finite morphisms is denoted by $H(S, T)$.

The main result of this paper is th. 4, which insures the existence of a bijection between the set of semi-finite morphisms between two standard H-cones and a class of functions, defined on the product of the spaces of representation. This characterisation is obtained using the following result, due to Cornea-Höllein [2] :