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SHIZUO YUIZONO

By

Yoshio MATSUOKA

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Shizuo Yuizono, who, at the time of his death, was Professor of Mathematics, Faculty of Science, Kagoshima University, was born in Sendai City, Kagoshima Prefecture, on 23 March, 1911, the eldest of a family of six, four sons and two daughters, of Eikichi, a farmer, and Kichi Yuizono.

Having received his compulsory education at a primary school, he entered Sendai High School. Some signs of his gift for mathematics became clear during his early education at the School, and it was Yuizono who was the very first successful candidate for an entrance examination of Hiroshima Higher Normal School in the history of the School. After he completed his course in mathematics at Higher Normal School in 1933, he was appointed a teacher of Kainan High School in Kôchi Prefecture. It was during this time that he developed an ambition to do research further in the field of mathematics. He was matriculated at the Department of Mathematics, Hiroshima University of Science and Literature in 1935, and graduated at the University in 1938. On graduating he was appointed a member of the mathematical teaching staff at the Junior Military Academy in Sendai City, Tôhoku District, where he remained for seven years.

In 1940 he married Hisako, née Hidaka, and spent a happy family life. The Yuizonos have four children, two sons and two daughters.

In January 1946 he went to Kagoshima Prefectural College of Technology as a Lecturer, and he was Assistant Professor, Faculty of Technology, Kagoshima Prefectural University, from April 1949 to June 1955. In April 1952 he was granted a leave of absence for one academic year's research in the field of the theory of Lie groups at Hiroshima University under the supervision of Professor Kakutaro Morinaga. He published the result of this research work in the papers [1] and [2]. In [1] he generalised the concepts of principal involution and antiderivation both of which had been introduced in the monograph *Théorie des groupes de Lie*, II, by C. Chevalley, and carried on investigation on the properties of these extended notions. He obtained five theorems and seven corollaries to these. Meanwhile in [2] he gave two necessary and sufficient conditions in order that an algebraic group of automorphisms of V contains the group of all the automorphisms of it which admits a linear function on V as an invariant, where V denotes a vector space of finite dimensions over a commutative field.

In July 1955 he was appointed Assistant Professor, Faculty of Literature and Science, Kagoshima University. He continued with his study, and the papers [3] and [4] were

published in succession. In [3] he extended further some of the properties previously obtained in [1], and established three theorems. One of the results, Corollary to Theorem 3 in [3], runs as follows: Let m be an integer ≥ 2 , let J_m be a principal m -involution of A , and let D_1, \dots, D_r ($1 \leq r \leq m$) be homogeneous m -anti-derivations of degree p of A by means of J_m . If p and m are relatively prime, then all the operations

$$((D_1^{a_1} \cdots D_r^{a_r})) \quad (a_1, \dots, a_r \geq 0; a_1 + \cdots + a_r = m)$$

are homogeneous derivations of degree mp of A . This result was employed by him in [4]. In [4] he gave generalisations of the concepts of symmetric algebras and exterior algebras which had been defined in the above-mentioned book by C. Chevalley, and showed that the analogous propositions also hold in this extended algebras. He established twelve theorems in [4].

In 1965 he was appointed Professor of Mathematics, Faculty of Science, Kagoshima University, a post which he held until his death in 1973. Since 1965 much of the administrative work of the newly established department fell to him. In 1970 he was elected a member of the Council of Mathematical Society of Japan.

To his colleagues and students, Yuizono was kind, unassuming. Also, he was a man of wonderful patience, had a strong sense of responsibility. Outside his academic work he played a full part in the general running of the University and his wise counsel was readily available to his colleagues not only in administrative matters but also on individual personal problems. He died on 12 October, 1973 after three months' illness. He is survived by his wife, two sons, and two daughters.

Shizuo Yuizono will be remembered with affection and gratitude by his friends, colleagues, and students.

The writer of this notice wishes to express his hearty thanks to Mrs. Yuizono and Professor Yamane of Botany, Kagoshima University, for their kind help in writing the article.

Publications by S. Yuizono

1. On the extensions of the principal involution and the anti-derivation I, *Memoirs of Liberal Arts, Kagoshima Prefectural University* (1954), 52-54 (in Japanese).
2. Conditions that an algebraic group contains the group which admits a linear function as an invariant, *ibid.*, 55-60 (in Japanese).
3. On the extensions of the principal involution and the anti-derivation II, *Sci. Rep. Kagoshima Univ.*, No. 5 (1956), 23-28.
4. Extensions of symmetric algebras and exterior algebras, *ibid.*, No. 6 (1957), 11-18.