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COLLOQUIUM ON ACOUSTICS AND ULTRASOUND IN BUDAPEST

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by T. Tarnotsi

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COLLOQUIUM ON ACOUSTICS AND ULTRASOUND IN BUDAPEST

[This is a translation of an article written by T. Tarnotsi, which appeared in Akusticheskiy Zhurnal (Journal of Acoustics), Vol. V, No 4, Moscow, 1959, pages 504, 505.]

The physics society "Lorand Etvos" organized in Budapest a colloquium on acoustics and ultrasound which took place on 7-8 April 1959. After the colloquium in 1955 and the 1957 conference this was the third meeting at which Hungarian specialists reported on their work. In part, the colloquium was devoted also to a discussion of those materials which Hungarian researchers were to report at the 3rd International Acoustics Congress in Stuttgart. Sixteen papers were presented at the colloquium, of which six were also to be read in Stuttgart. Discussion of individual papers was preceded by the addresses of specially formed sections of the colloquium (co-speakers) who had an opportunity to acquaint themselves in advance with the contents of the reports. Therefore, meetings had the character of working colloquia with 40-50 participants.

At the opening of the colloquium the introductory address was delivered by I. Barta.

I. P. Valko reported on microphone and amplifier noises. The speaker examined the problem of the noise of different microphones partly on the basis of already known theoretical methods and partly on the basis of his own investigations, particular attention being paid by him to the question as to which types of microphones are expedient to use in combination with semiconductor amplifiers.

Later, T. Tarnotsi addressed the meeting with a report on the restrictive role of syllable and sound entropy. According to his conclusions, the sound entropy proves to be much more convenient for an all-around characteristic of speech than the syllable entropy utilized formerly.

D. Khusti reported on his theoretical studies on the problem of the synthesis of projectors with circular symmetry and a uniform distribution of velocity. Co-speaker Z. Barat supplemented the report with remarks relative to experimental technique. The last two reports were inserted in the program of the conference in Stuttgart.

The paper by T. Mand'yak was entitled "Variation in the Power of Carbon Microphones in Relation to Tolerances in the Manufacture." Discussion showed that investigations conducted by the author and the statistical deductions will be very useful for Hungarian telephone industry.

I. Weisburg and P. Gregus reported on the influence of ultrasound projection on electroluminescence. They carried out successful experiments and interesting effects had been observed. Co-speaker T. Hofman made a number of remarks relating to the explanation of the phenomenon and the organization of systematic experiments.

T. Tarnotsi acquainted the audience with his new paper entitled "Acoustical Zonal Lenses." This report was also included in the program of Stuttgart conference.

P. Gregus investigated on the basis of quantum theory the relationship between surface stress in metal and ultrasound velocity. Co-speaker, and also other Hungarian specialists familiar with quantum theory, disputed the applicability of the known fundamental equations with various assumptions adopted in the derivations. P. Gregus is sending this report to Stuttgart.

A. Illeni reported on his experimental observations on the surface phenomena in liquids upon radiation with ultrasound. This work is in the initial stage.

D. Tamash measured the speed of sound in water and in CaCl solutions by the classical optical method. His results agree with the published data.

Ye. Mad'yari made a generalizing report on the physico-psychological character of natural and reproduced sounding for the most part on the basis of his own observations and experiments. Inasmuch as many researchers are engaged in similar problems, the report caused a lively discussion.

Mrs. M. Lukach read a paper entitled "Subjective Acoustical Investigations of the Interrelationship of Musical Tempo and Reverberation Time." Her subjective experiments indicate that for an average listener such interrelation does exist.

The address by T. Yarfash was devoted to the difference between subjective and physical reverberation time. The last two reports were included in the program of the Stuttgart conference.

A. Gregus and P. Gregus reported on the influence of ultrasound on the catalyzing ability of MnO_2 suspensions and gels. The joint reader of the paper presented a series of considerations on the mechanism of catalysis.

The paper by B. Kokhish was devoted to the connection between the toughness of concrete and the speed of sound in it. The author has processed vast experimental data, systematized literature materials published earlier and gave an explanation of the discrepancies observed. Experimental methods developed by the author are quite reliable and are already applied in practice. The joint speaker remarked that, unfortunately, these valuable materials have not yet been published abroad.

After this, a paper was read by G. Ronto, G. Tamash and I. Tar'yan which was devoted to the investigation of intensification of diffusion upon action by ultrasound. The speakers studied the increase in the rate of diffusion in the muscle tissue of the frog. The joint

speaker made important suggestions on broadening the studies.

A. Balint and Mrs. I. Nagy read a report entitled "Variation in the Specific Resistance of Blood Upon Action by Ultrasound." In the course of the discussion, there were remarks directed at the explanation of the phenomenon, and ideas were also expressed on the possibility of decreasing the high dispersion.

Upon completion of the work of the colloquium, T. Tarnotsi reported that at this colloquium there were read reports on physical and biophysical nature. Papers of medical and technical tenor were excluded despite the fact that there were offered many papers on these problems. These papers will be discussed at a later meeting. Hungarian acousticians plan to call in 1961 a conference on a broader base.

INTERNATIONAL CONGRESS OF GENERAL AND APPLIED PHONETICS

Phonetics Laboratory of Hamburg University is calling with the participation of German and international societies, an International Congress on General and Applied Phonetics.

The Congress will convene in September 1960, in Hamburg.

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