INTERNATIONAL INTERDISCIPLINAR CONGRESS "VIZOTUM–93" ON THE UNSOLVED PROBLEMS OF ATMOSPHERIC ELECTRICITY

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The International Congress "Vizotum–93" was held in Salzburg (Austria), September 19–22, 1993. Initially the Congress was decided to be solely devoted to the problem on the ball lightning. However, the organizer of the Congress Dr. A. Keul (Salzburg University) was faced with the problems drawing up the program. As a result, the title of the Congress as well as its directions undergone sufficient changes. The preparatory period was initiated since the beginning of 1992. Originally only 15 leading specialists with the reports on atmospheric electricity problem were expected to be invited. To do this the special invitations were sent to expected participants of "Vizotum–93". Already at the end of 1992 the abstracts of submitted reports were published and sent to the participants to inform them about subjects of forthcoming reports. By April of 1993 the full texts of all the reports were also published and sent to the participants. So good organization contributed to the Congress to be held successfully.

Thus on the whole, 30 specialists took part in the Congress. Some reports were devoted to the other problems of atmospheric electricity. The scientists from Belgium, Great Britain, Hungary, Netherlands, Norway, Russia, USA, Germany, and other countries participated the Congress as well as the scientists from Austria. Altogether 25 reports were heard and discussed, which were arbitrarily divided into the following sessions: "Does the ball lightning exist?", "What do the eyewitnesses announcements tell about?", "How strong is the effect of glowing formations in the atmosphere on the culture?", "What is measured and what is simulated (under laboratory conditions)?", and "What theories can help in the future?".

The special attention in the reports was paid to the problems on recording of lightnings including the ball lightning and on the statistical processing of experimental data. The oral report by A. Gugenbauer, the head of Lightning Protection Company (Austria) was devoted to these problems as well as the reports by K.–H. Hentschell, A.D. Wittmann (Germany), and others. Unfortunately, it should be noted that some scientists (for example, B.M. Smirnov (Russia)) did not present new results restricting themselves to already long–known statistical data. The report by E.T. Protasevich and V.P. Skavinskii was not directly concerned with the ball lightning problem but was devoted to the elucidation of cause–and–effect relations of atmospheric luminescence during the observation period when impact of the anthropogenic factor can be neglected. This report was based on the statistical processing of the data from Zhandarm Administration archives of Tsarist Russia collected at the period from 1914 to 1916.

The oral report by E. Strand (Norway) was devoted to the Hessdalen Project which proposed both Russian and Scandinavian scientists to joint their efforts in order to elucidate the physical nature of luminescence in the Norway mountains. The technical possibilities for recording of the atmospheric luminescence of various types were also considered.

The report by A.G. Keul (Austria) "Ball Lightning: Physics and Psychology" devoted to study both of the physical nature of this phenomenon and psychophysical effects of its impact on the people and environment, made a large impression on the participants.

The report by G. Egely (Hungary) was concerned with the analysis of destructive actions caused by various types of lightnings. Unfortunately, the author did not try to understand the causes of these destructions. It was unclear whether there were the "traces" from ball lightning or from other natural disasters of atmospheric origin.

A. Puhringer (Austria), the oldest participant of the Congress considered in detail the causes of appearance both of ball and beaded lightnings.

As to experimental works dealing with the problems on ball lightning simulation under laboratory conditions, the reports by G.S. Dukais (Netherlands) and E.T. Protasevich (Russia) devoted to high–frequency discharges should be noted. The former presented the results of ball lightning simulation in dry air, the latter considered the properties of the cold non–equilibrium plasma under conditions of air of variable humidity. V.L. Bychkov (Russia) in his report also dealt with the problems on ball lightning simulation in erosive–type discharges. In this report the author proposed the principally new model of ball lightning. The report was welcomed with a great interest.

As to theoretical works, the report by B.M. Smirnov (Russia) should be noted, where the author analyzed the possibility for making clear the physical nature of ball lightning using the properties of fractal clusters.

Nest congress was decided to be also held in Salzburg (Austria) in two years.

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